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Clinical and Case Reports.

Clinical Notes on Some Conditions met with in the Mare following Parturition and in the Newly-born Foal.*

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I was influenced in my choice of subject by thinking that horse breeding has not become so neglected in this part of the country as it has in many, and consequently veterinary work in relation to this is of particular interest to members of this Division, especially at this time of the year. I am afraid, however, that these notes may appear somewhat scrappy; but since joining the ranks of country practitioners I find, as I am sure most of you do, that there is little time to spare for the careful preparation of papers on any one specific subject, which I pointed out to your worthy secretary when he wrote inviting me to give a paper at this meeting. I trust, however, that my remarks may be a sufficient foundation for a good discussion.

VAGINAL AND VULVAR TEARS.

Severe tearing and bruising, followed by sloughing, of the vaginal wall is not uncommon, particularly in young mares at their first foaling, and short of complete rupturing of the vaginal wall is not, as a rule, followed by any serious consequences; in fact, it is indeed surprising that more trouble does not follow in some cases in which the tearing of the vaginal wall has been very extensive.

Complete rupture of the vaginal wall is generally caused by one or both of the fore feet or the nose and lower jaw of the foal, and occasionally by the hind feet in case of breech presentation, being caught up in front of the hymenial fold and forced through the roof of the vagina during the act of foaling, and it is usually accompanied by rupture of that part of the rectal floor immediately in apposition with the injured part of the vaginal wall. If such an accident is not early discovered and if help has not been quickly forthcoming, the feet or head will pass out of the anus and the whole of the septum between the rectum and vagina posterior to the place of rupturing may be torn through. Should reduction have been accomplished and delivery effected, spontaneous repair may eventually follow in spite of the inevitable severe and continuous soiling of the wounded tissues with fæcal matter from the rectum. On the other hand, although very considerable lessening of the connecting opening may have taken place, when the healing process is finished a recto-vaginal fistula, even of small diameter, may persist. Such a fistula, owing to the anatomical, and one might say bacterial, superiority of the rectum, will defy the most elaborate and careful surgical attempts at closure, and it is practically certain early to terminate the breeding career of the mare by allowing contamination of the genital passage followed by an extension of this infection forward to the uterus, setting up septic endo-metritis. A mare with a small recto-vaginal fistula may get in foal if mated the year of the occurrence of the injury, conception taking place before infection of the uterus has occurred.

In some cases the peritoneal cavity is opened; the rupturing has occurred in that part of the vaginal roof which is anterior to the limitation of the recto-genital pouch of the pelvic peritoneum. In such cases it is highly probable that the nose or feet of the foal have been caught up in the posterior part of the uterus immediately above the cervix, resulting from an insufficient or delayed dilatation of the latter. An injury of this description need not necessarily of itself prove fatal; but, except where it has occurred in cases of difficult labour at which someone is in attendance, its occurrence is not suspected and the protruding part of the foal is forced along to the extreme posterior limit of the recto-genital pouch and there ruptures through into the rectum. Should replacement have been carried out, immediate escape of bowel, colon or small intestine, may follow birth of the foal, necessitating destruction of the mother; but even if this does not occur death is certain in one or two days from septic infection of the peritoneal cavity from the ruptured rectum.

In those cases in which there has been complete tearing through of the recto-vaginal septum an attempt should be made to bring the torn edges into apposition by sutures. It is exceedingly unlikely that really satisfactory healing and repair will be obtained, particularly at the outer extremity of the tear, but some healing deeper in may take place; and in any case the early extreme sagging apart of the torn edges will be prevented and the commencement of the healing process will be encouraged and aided. For these and the more common vaginal tears, daily cleansing with some non-irritant antiseptic will, as a rule, suffice. Results obtained by the use of " BIPP " would seem, however, to repay the personal extra time and trouble in applying it; in reality the extra trouble is very little, as redressing is required only every two or three days.

It is with vulvar tearing that I wish more particularly to deal to-day. I have intimated that it is exceptional for bad results to follow even quite severe tearing of the vaginal wall when unaccompanied by rupturing of the rectum. Still more is this apparent when comparing them with tears of the vulva, particularly from the point of view of their interfering with the animal's breeding. Even small tears of the vulva may, and frequently do, render the animal sterile.

Tears of the vulva generally occur at the upper commissure of its lips, across the perineum towards one side or other of the anus, and may vary considerably in degree, extending in some cases for four or five inches up to the

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side of the anus and a similar distance inwards along the roof of the vulva. The deformities seen at the middle part of one or both lips of the vulva have, as a rule, resulted from severe bruising followed by sloughing of these parts rather than from any severe tearing; and they more frequently follow the manipulation necessary in cases of difficult parturition. Their presence is of no particular importance. This is in marked contrast to tears in the region of the upper commissure; and the seriousness of the effects of a tear at this point is not in direct proportion to the degree of the tearing.

The labia of the vulva perform a valvular function at the extreme posterior extremity of the genital passage, this valvular action being precisely similar to that of the rubber expiratory valve of the gas mask used in the late war; they are aided in this action by the constrictor muscles of the vulva. Even a slight tear of the upper commissure that has been allowed to heal of its own accord will so interfere with the correct apposition of the labia at this point that their valvular function is destroyed and air is allowed to pass in, thus converting the vagina into an actual instead of a potential cavity, as it should be in the normal healthy state. This ingress of air is more noticeable during movement of the animal and is then accompanied by a distinct noise. The atmospheric pressure in time brings about a most pronounced dilatation or ballooning of the vagina. This dilation is apparently only limited by the walls of the pelvis and hinder part of the abdomen. The womb, too, has a tendency to drop. Dried fæcal matter from the lips of the vulva and the torn perineum is drawn in with the inrush of air and infects the genital passage, setting up a catarrhal condition of its mucous membrane. Extension of the infection to the uterus is almost bound to follow, giving rise to a more or less serious endometritis. The ballooning of the vagina and dropping of the womb aid this extension of infection and render successful treatment well nigh impossible; for when the vagina is pronouncedly dilated the floor in its anterior part is at a lower level than the pelvic symphysis and catarrhal discharges do not tend to drain away but accumulate, a factor in itself productive of a vicious cycle. In extreme cases it is no uncommon thing to see the os and cervix bathed in a pool of catarrhal discharge.

I would mention that the entire condition I have outlined as following tearing of the upper commissure of the vulva is occasionally seen in a mare that has received no injury to the vulva, and exceptionally in the maiden mare. Such animals, however, in which these conditions are seen, will be found to have a marked tendency to level croups and high-set-on tails; the rectum and anus are as a rule drawn forward and the vulvar cleft, in its upper part at least, has an inclination to the horizontal rather than the vertical, and the valvular function of the vulva is impaired.

This same condition may be the picture presented at the termination of the breeding life of an old mare that has had many foals; the gradual lowering of the womb, slackening of the abdominal muscles and pelvic tissues and the dipping of the back all tend to bring about a state that is conducive to it.

I am afraid I have painted a very dismal picture of effects likely to follow tearing of the vulva; but, speaking from experience, I do not think I have over-estimated its seriousness. It is some consolation, however, to know that the seriousness of these effects may be considerably lessened or even prevented by a comparatively simple operation.

It is possible that immediate suturing of the wounded tissues would be followed by satisfactory healing, but as a rule one is not consulted, if one is consulted at all, until some hours or even days after the occurrence of the injury, when suppuration and granulation are well advanced; and even if one is in attendance at the time of foaling it is unlikely that the necessary material and dressings are to hand. Further, owing to the extremely relaxed condition of the tissues at the time of parturition it is doubtful whether as successful results would be obtained as may confidently be looked for if the repair is done at the correct time afterwards. I say correct, for there is an exactly correct time limited to a period of practically only a few hours. It occurs about the seventh of eighth day after parturition and it is a particularly fortunate circumstance that as a rule it coincides with the first *post-partum* œstrum, a fact that renders somewhat easier, in the majority of cases, the carrying out of the operation: the mare is less likely to object to these parts being handled and one can thus more correctly place a local anæsthetic, which should always be used. For this latter I prefer Waite's solution as, in my experience, considerably less subsequent local swelling is produced with this than with solutions of cocaine or even other preparations.

The best course to be adopted in order to prepare the wound for the operation is to apply "Bipp" treatment during the intervening days; about three dressings will suffice. These dressings should be carried out very thoroughly with the whole ritual of this method of wound dressing. If this course is observed it will be found that the dirty, uneven, suppurating surface of the wound will, by about the seventh or eighth day, have taken on a more or less clean, smooth, uniformly bright-red-coloured appearance. This appearance is the indication of the most suitable time for suturing the wound. For, when once the wounded surfaces have arrived at this state of healing, marked shrinking and hardening of them will take place in the course of a few hours; and in order to obtain the best results it is particularly necessary to bring them into apposition before these changes have advanced to any great extent or even begun.

A very satisfactory method of bringing the wounded surfaces into apposition is to employ two rows of interrupted sutures, one superficial and the other deep. I have found that in order to get the best result from the latter they should be of the quilled type, using a form of silver clamp, a specimen of which is exhibited. These deep sutures, which should be of double strands of No. 14 plaited silk, are first placed in position; each suture is knotted at one extremity and withdrawn so as to bring this knot to within about one inch of the perineal surface. The superficial sutures, for which No. 5 silk is suitable, should be closely placed in the free edge of the wound and tied; the free ends, which have been left several inches long, should be knotted at their extremities. These ends can be so held by an assistant as greatly to facilitate the placing of the clamp into the deep sutures and the

tying of the latter. It is well worth while adopting any means that tends to expediency, for, although the majority of mares do not give much trouble, there is a limit to the endurance of every one of them.

It is advisable at this part of the operation, before finally fixing the deep sutures, to re-" Bipp " the surfaces of the wound by passing a pair of artery forceps holding a small piece of cotton wool soaked in " Bipp " up between the superficial and deep sutures and along the roof of the vulva. In order finally to fix the deep sutures, one arm of the clamp is passed through the loops at the knotted ends of the sutures and then, by withdrawing still further the sutures, this arm will be held in position parallel with the edge of the wound. The other arm of the clamp is then placed between the two ends of the several deep sutures and by pulling lightly and levelly on the ends of the superficial sutures the deep ones can be tied and the lips of the wound fixed securely between the arms of the clamp. " Bipp " should be applied to the wound over the sutures and around the clamp; and this dressing repeated every second day. Healing will be complete in about a week, and when this has taken place the sutures should be removed and not allowed to cut out. I have not yet had a single failure in which this method of suturing has been employed.

It is probably advisable that the mare should not be served until the following season, by which time any excess of cicatricial tissue is reabsorbed and the injured tissues have become quite soft and supple again.

[Mr. Reynolds exhibited three plasticine models: one showing the usual appearance of the upper commissure of the vulva following a tear that has been allowed to heal of its own accord; another demonstrating the use that can be made of the superficial sutures for expediting the adjustment of the clamp and the tying of the deep sutures; the third, appearance when the operation is completed.]

Before passing from this subject, I would like to refer to two other conditions, although they do not rightly come under this heading. One is rupture of the vestibular bulb, and the other rupture of the bowel unaccompanied by rupture of the uterus or vagina.

I have referred to the former as rupture of the vestibular bulb for the want of a better name. The two halves of the vestibular bulb, which is the homologue of the corpus spongiosum of the male penis, are placed one on each side of the vulva under the mucous membrane of the lateral wall of the vestibule and covered externally by the posterior constrictor muscle of the vulva and the skin of the respective labium. They are supplied by a large branch of the perineal artery, a branch of the internal pudic.

It is not uncommon to find, after a difficult foaling, or even after a normal foaling, a large tumour-like formation bulging outwardly from one or other side of the vulva. The mucous membrane covering it is congested and may be showing some abrasions, and even if the latter are not present at the outset ulceration will soon occur, owing to infection of the covering membrane, by its becoming dry and contused. There should be no undue hurry to deal surgically with such a condition. Infection from the superficial ulceration soon extends to the enclosed mass which, in the course of a day or so, will become spontaneously enucleated and shed. The free use of some mild liquid antiseptic is all that is needed. Early incision of the enlargement or other surgical interference will be attended by serious hæmorrhage with which it may be difficult to deal.

The other condition to which I have referred, bowel rupture unaccompanied by rupture of any part of the female genitalia, although not of common occurrence, may easily and quite unexpectedly occur. Possibly I cannot do better than relate two cases of it which I encountered only last foaling season. The first was in an eight-year-old thoroughbred mare that had had three foals in successive years, and the second was in a fourteen-year-old thoroughbred mare that had had ten foals, one each year she had been at the stud. Each mare was said to have foaled normally and easily without any assistance. In the former there was a small rupture about 3 in. long in the posterior side of the crook of the cæcum, close to where it is adherent to the abdominal roof. It is highly probable that the rupture was caused by the bowel being forced on to one of the foal's hind feet while its hips were in the dam's pelvis, either during severe straining on the part of the mother, or by her dropping to the ground while the foal was in this position. In the latter case the rupture was even smaller, only about 1½ in. long, situated at the inferior part of the rectum about 18 inches in from the anus. In this instance it is probable that the rupture was caused by an over-loaded rectum or by the withers of the foal crushing the rectum against the dam's sacrum.

In both cases the symptoms displayed were roughly similar, except that in the first case the onset of the symptoms shown occurred about three hours after foaling and then gradually subsided until by the twelfth hour they had almost disappeared and the mare ate a feed and drank some water. They returned later with increased severity at about the twentieth hour, the same hour at which they were at first noticed in the second mare, in which they were also very severe. The temperature was elevated about four degrees in each case—there had been a rise of only one degree in the first mare at about the twelfth hour; the pulse was rapid, irregular and very wiry; the respirations were increased in frequency but not rapid, and they were markedly thoracic in character, the abdominal wall being held more or less fixed; muscular tremors, chiefly in the region of the flank and axilla, were noticeable; restlessness and uneasiness were shown by the animal looking round at its sides, occasional pawing and moving about the box, and in no case that I have ever seen could one, in order to describe the expression on the animal's face, apply the term *anxious* more correctly; there was no exhibition of violent pain. Examination of the vagina and uterus did not reveal any injury or other abnormality. From this time on the animals gradually collapsed and died in about 12 hours, between 30 to 36 hours after foaling. It is probable that as the onset of symptoms in the second mare was somewhat delayed owing to the position and the smallness of the rupture, free escape of fæcal matter and general contamination of the peritoneal cavity would not occur so readily as in the other case.

Fracture of Ribs and Bruising of the Heart of the Foal at Birth.

I described this condition and exhibited a specimen of it at a meeting of the Central Division some four years

ago, but have seen no further report of it, and from only one veterinary surgeon have I heard that he had observed a case since I pointed it out. I am rather surprised at this, because I see four or five fatal cases of it every foaling season. Admittedly I now come in contact almost solely with thoroughbreds, but speaking from previous experience with the heavier breeds I am unable to satisfy myself that the contributory causes can differ very much in the various breeds. I feel sure that the majority of foals that die immediately after birth and during the following 36 to 48 hours die from this cause; and in those dying immediately after birth I include those that, although born alive, never properly breathe. It appears fairly sound reasoning that if one comes across this number of fatal cases with definite fracturing of one or more ribs, then there must be a much greater number of foals affected less seriously; and I am satisfied that this particular type of injury, by lowering the animal's vitality, is often the primary cause of some of the illnesses affecting the newly-born foal. So sure do I feel of the truth of this that I always make a careful examination of the thorax of any ailing newly-born foal I am called to attend. The specimen I have here is exceptional in regard to the number of ribs injured and in regard to the time the foal lived; ossification and repair are well advanced. The foal lived for 24 days, and eventually died from septicæmia, exhibiting symptoms of pronounced arthritis. The cause of the accident is compression of one or both of the foal's elbow joints on to the chest wall during a violent expulsion effort as this part of the fœtus is entering the maternal pelvis; it is possible, too, that owing to the particularly sharp keel-like sternum in this species the accident may be caused by a buckling over to one side or the other of the sternum of a deep-chested foal during its passage through a shallow-pelvised mare. The injury is almost always in the region of the fifth rib, and generally one or two ribs of either side of this are also affected. It is invariably accompanied by bruising of the front of the heart, the muscle of the right ventricle showing more or less marqed discoloration. Varying degrees of hæmorrhage in the corresponding inter-costal spaces, both intra- and extra-thoracically, are also present. There are cases in which severe squeezing of the heart occurs unaccompanied by fracture of any ribs; and I have seen a case in which there was actual rupturing of the heart.

The onset of symptoms in the majority of cases is fairly sudden and may take place at any time up to the twenty-fourth hour after birth. The foal may have appeared quite normal and lively, and the first thing that may be noticed is that it leaves off sucking and gradually becomes dull; it usually then shows some uneasiness and lies down, at times flat on its side and at others lying up on its sternum with its fore legs stretched out in front, frequently putting its nose round to the side of its chest and making a moaning noise as it does so. The foal rapidly sinks and dies in the course of the next 12 hours. Probably the best precaution to adopt in order to lessen the risk of the occurrence of this injury is for the attendant to take care that both fore limbs of the foal are well extended before the head has advanced too far along the passage. When once this precaution has been taken, however, foaling should be allowed to proceed naturally; there should be no undue hurry artificially to effect delivery.

The next matter I would like to bring forward for discussion is a nervous affection in foals of which we see several cases every season. I cannot refer to it under any particular heading, for the simple reason that I am quite at a loss to give it a name. I mention it here because I have on several occasions observed it concurrently with the last condition to which I have referred, and I had been led to wonder whether the nervous symptoms shown might not be caused by some deficiency in the circulation of the brain resulting from injury to the heart. There are, however, other factors in connection with this particular condition which do not support this view, but which would seem to indicate that it is purely nervous in origin, namely, it is often observed in successive foals of one mare; and in any one season it sometimes happens that most of the foals affected are by one particular sire.

It is usual to be requested to attend a foal that is "barking like a dog." In some instances in which the stud groom is acquainted with the condition he will ring up and simply say he has got a "barker" and request one to attend. Such a designation is very apt, for if one has not previously encountered the condition, and should happen to be standing in a yard outside an affected foal's box, the noise heard is indistinguishable from the yapping bark of a dog.

The onset of symptoms occurs almost always during the first 12 hours after birth, and in the majority of cases shortly after the first time the foal has sucked. So noticeable is this that, were it not for the fact that an odd case or two has been observed in foals that have not even got up after being born, there might be strong suspicion that the dam's milk contained some abnormal injurious product. The chief symptoms shown in typical cases, in addition to the one already mentioned, are:—the foal is down and unable to rise, clonic spasms are pronounced, the foal is almost incessantly struggling, by making galloping movements—there may be short intervals in which these movements are not so pronounced; temperature is normal, or only slightly raised; pulse and respiration, in all probability on account of the struggling, are increased in frequency; blindness is a pronounced symptom, and there is reason to believe that this is not in existence until the onset of the accompanying symptoms. Prognosis is most unfavourable. I have seen only one case recover. In this case all the typical symptoms, except very pronounced barking, were shown and lasted for about 24 hours. When this foal was able to get up it was inclined to wander and did so for several days; the blindness gradually disappeared and the foal appeared to make a complete recovery and is now a very good yearling. I have heard of one other case that recovered and the animal eventually won good races.

Discussion.

The President (Mr. J. H. Poles) said that they had been privileged to listen to an exceedingly interesting paper that afternoon, and they were very much indebted to Mr. Reynolds for preparing it and for coming to Grantham to present it to them. (Applause.) He was sure that Mr. Reynolds would be very pleased to reply to any questions which any member desired to put to him on the important subjects of his discourse.

The discussion centred very largely around the phenomenon of the barking foal, and, in response to a member who asked if the condition had been met with in the heavier breeds, Mr. Reynolds said that in his experience it had been confined to the thoroughbred. He could find no trace of anything having been recorded in connection with the condition, and, though he had asked many veterinary surgeons about it, he had never received any reply which could throw any light upon it.

Replying to Mr. T. Knowles who enquired if there was anything to see on *post-mortem,* and who observed that if the larynx were normal the foals could not make the noise, or one would expect horses to do so on many occasions, such as when one showed them the stick, the essayist said that he had made *post-mortem* examinations as carefully as he could, but he had been unable to discover any lesions that would account for the condition. As he had mentioned in his paper, he had seen it occur concurrently with fracture of the ribs and bruising of the heart; but his own view was that the condition was purely nervous in origin; and in his experience it was almost impossible, on making *post-mortem* examinations on cases in which there were affections of the central nervous system, macroscopically at any rate, to discover any changes that one could honestly feel satisfied were responsible for the trouble. Many of these thoroughbreds were normally of a highly nervous disposition. Besides the mare he had mentioned, all of whose foals had been affected, he had met with some that had bred healthy foals and had then had several affected; one in particular, very well-bred and herself a good performer, was, after breeding several normal foals, sold at public aution for a big sum; unfortunately her next two foals were affected in the way described and died. One could, perhaps, excuse the new owner for being inclined to think he had been sold a " dud " animal. In regard to the larynx being normal or not, he would remind them that everyone of these foals was blind and quite unable to stand; it was reasonable to suppose, therefore, that the action of the larynx might not be normal, although not actually paralysed, as there appeared to be no difficulty in breathing, nor did there seem to be any evidence that the foal's blood was not getting properly ærated. The sound in the larynx appeared to be produced by the convulsive contractions of the chest and abdominal walls during the foal's struggles. One case he had met with in which there was also fracturing of a rib had recovered, but did not thrive and died in about four weeks after developing symptoms of septicæmia. Treatment seemed to be of no avail; sedatives exerted only a slight temporary effect.

Mr. T. Hicks put forward the suggestion, inasmuch as the " barking " condition was seen in nervous, well-bred animals exclusively and immediately after birth, that an intra-uterine infection was probably the cause. If one had a mare that one knew was prone to cast such foals, it might be possible to get a vaccine prepared and to immunise her.

The essayist said a point that would seem to contra-indicate the view that an infection came through the mare —and there was nothing to suggest one did come through the dam except that the condition had been observed in successive foals of particular mares—was, as he had mentioned in his paper, that in some seasons it seemed that most of the foals affected were by one particular sire. For, since this would mean, at the outside, a very small proportion of a suspected sire's foals were affected in any one season, one could not hold that he was handing on the infection through the mares.

The President: Then it appears that there is something hereditary about it.

Turning to another subject, Mr. Lockwood enquired if joint-ill was frequently a source of trouble in thoroughbred studs.

Mr. Reynolds replied that it was not a great bother to them; and he was inclined to think that the reason why they did not see a lot of it in thoroughbred foals was because these were subject to much greater care and cleanliness, and their surroundings were so much more hygienic than the ordinary farm stables. He held the view that the symptoms of joint-ill were simply the symptoms of septicæmia and that no one specific organism was responsible for all cases or outbreaks of joint-ill. McFadyean and Edwards had shown this in the work they did upon the subject, and he felt certain it was the correct view, and herein lay the difficulty of vaccine treatment for it. The symptoms of joint-ill due to the mare abortion bacillus differed widely from those for which a streptococcal infection was responsible, and he held the view rather strongly that joint-ill in foals, other than that due to infection with the mare abortion bacillus, resulted almost solely from infection at the navel.

Mr. W. A. Dickinson observed that he had cases in which the foal had merely been lame, but in which the condition progressed to that of joint-ill.

The Hon. Secretary (Mr. H. C. Reeks) remembered a mare that had an attack of poll-evil and was cured, yet the three foals that she had afterwards all went down with joint-ill.

Mr. Reynolds then enquired whether no one had anything to say in regard to the injury to the ribs which he had described. If not, perhaps the reason was that on farms *post-mortem* examinations of foals were not made. He was certain that the accident occurred fairly commonly, and he felt equally certain that it was not only in thoroughbreds that it did occur. The fracturing of the ribs could easily be detected during life, and on *post-mortem* examination the discoloration of the muscle of the heart due to bruising could easily be seen on washing that organ; it was usually more noticeable in connection with the wall of the right ventricle.

Mr. G. Lockwood remarked that during the foaling season one often met with foals that appeared quite all right directly after birth, but after a few hours they would lie down, become sleepy and heavy, and eventually they faded out. He should think that this might well be due to the heart trouble that had been described.

Mr. Reynolds thought that Mr. Lockwood had very closely related the symptoms that he himself had described, and he had no doubt that many of these cases were due to this particular injury, but the President expressed the view that the " fading out " condition, to which Mr. Lockwood had made reference, was more often due to the mare's milk being too rich. He was speaking of something with which he was well acquainted, because when he was at home with his father they used to go in for showing Shires, and they had one mare whose foals in three successive years " faded out," but after that they used to milk all the milk away from her, after which she reared a number of fine foals. The condition was seen more often in the Shire than in the thoroughbred because the former had a far more plentiful supply of milk.

Mr. Dickinson: To revert to those wounds of the vulva, if one is called to a case that has been in existence for some time, would it be any use opening up the original wound?

Mr. Reynolds replied that he saw no reason why this should not be done, but he doubted whether it would be worth while in old standing cases, because, although one might successfully repair the injury one would still have the infected genital tract to deal with; a very difficult matter.

The President then made enquiries in regard to the use of the Danish Embryotome, and Mr. W. W. Lang observed that he would not be without the new instrument on any account. The great advantage of it was that it prevented injury to the mother. It was a splendid instrument, easily adjusted, and one could cut through anything with it, while it was equally effective in any position, which was not the case with the loose wire. He had the instrument with him and would be pleased to exhibit it, and describe its method of use, to the members. [Mr. Lang did so, and readers who are interested in the instrument are referred to Mr. T. Birtwistle's article, published in the *Veterinary Record* of September 7th, 1929 (Vol. IX, No. 36, pp. 751-753), entitled " Some Observations on the Use of the Danish Embryotome."]

Translations.

The German Army Veterinary Service During the Great War.*

The German Minister of Defence (*Reichswehr*) published, in March last, a very interesting, "Veterinary Report of the German Army on the War of 1914-1918."†

As was also the case in France (prior to the War) the German High Command did not attach any importance to the question of the veterinary service during warfare: a very short campaign was anticipated, with extensive and rapid movement, that would not admit of the provision of stationary installations or of the transport of the impedimenta required for the treatment of sick horses. There were not in existence any relevant field service regulations beyond five paragraphs, among peace establishment orders, which were to be applied on mobilisation.

The effective strength of the veterinary corps was much reduced. The German armies entered the field with 766 veterinary officers on the active list and 1,507 on the reserve. The shortage in personnel was soon made up by considerable voluntary enlistments; veterinary surgeons in private practice and in civil employ joined up in large numbers. Veterinary students were taken on either as veterinary assistants or in the various arms of military service; those who were undergoing training at the Military Veterinary Academy asked to be sent to the front as fighting soldiers.

It was not so easy to take steps to remedy defects caused by lack of organisation and material equipment. The reserve corps and *Landwehr* had no directors of veterinary services (administrative veterinary officers). Veterinary officers attached to the troops rendered very little effective help: they could only be of assistance at night time, for the troops were continually on the march and the establishment of field veterinary hospitals had never been contemplated. Sick and wounded horses were often abandoned or needlessly slaughtered. Several army corps led about with them their supplies of remount horses. Another result of the defective organisation of the service was that contagious diseases appeared among the animal strength of the armies and spread with all the greater rapidity, inasmuch as the armies were located in invaded territories.

This grave state of affairs was perceived and taken in hand very quickly by the higher authorities. Veterinary-General Gramnslich, who held the appointment of *rapporteur* on the veterinary services at the declaration of war, was recalled to the Ministry of War in November, 1914, and was placed in the position of Director of Veterinary Services of the armies on the Western and Eastern (and, later, South Western) Fronts, as well as of the services on lines of communication, army groups, and divisions. He was severely wounded, in March, 1915, on the Eastern Front, and was replaced by Veterinary-General Wöhler, who, assisted by Stabsveterinär Schulze, was destined to occupy the post until the end of the war.

From this time onwards, there was ordained a long series of measures, and the armies were provided with such material for veterinary treatment and farriery as was considered indispensable. The directing (administrative) veterinary officers were supplied with an autonomous personnel or had their requirements met in this respect by the army corps. The chief veterinary officers with the Military Commands entrusted with government of Belgium and Poland were vested with special powers to enable them to institute a satisfactory veterinary sanitary police system in these countries. Veterinary-General Schlake, director of the former Military Veterinary Academy, was posted as Technical Director of the veterinary services. From May 2nd, 1915, field hospitals (Pferdelazaretten) were created by army orders and a complete system of war organisation brought into existence.

In 1914, there were 7,200 veterinary surgeons in Germany. Of this number, 4,600 (64 per cent.) were joined to the army, comprising 800 veterinary officers of the regular army, 2,200 on the reserve list, and 1,600 engaged for the duration of the war; in addition, 754 veterinary assistants were employed. That is, a total of 5,350 veterinarians. This figure seems rather high, and yet 50 per cent. of the available posts remained vacant, chiefly in the army on the Eastern Front.

The losses sustained in the veterinary serices are well-known. A commemorative tablet erected in the large hall of the Army Veterinary Laboratory, Berlin, bears the names of 241 veterinary officers who died on active service, comprising 9 veterinary generals, 14 *commandants* (majors?), 67 captains, 67 lieutenants, 57 sub-lieutenants, and 34 veterinary assistants.

The Report records all the lessons to be learnt from the late War; necessity for establishing close *liaison* between the veterinary services and headquarter staffs; the organisation of receiving and clearing stations on lines of communication and of field veterinary hospitals; the prophylaxis of contagious diseases; hygienic maintenance of horses at rest; feeding and the use of substitutes for the ordinary foodstuffs; shoeing, etc. The veterinary officer ought to be prepared for his task as it is likely to confront him in time of war. He ought to be provided on service with adequate means of transport such as motor conveyances for veterinary officers with corps and division headquarters, two saddle horses and a mounted orderly for each veterinary officer with fighting troops, etc. Posts of the same importance—veterinary officers of army groups, armies, divisions and lines of communication stations, and of regiments—should be allocated to officers of equal rank. Veterinary officers ought to be vested, in all circumstances, with disciplinary powers over personnel entrusted to their charge.

Among the duties that fall to the Army Veterinary Service are included, the use of laboratories and research institutes for diagnosis; prophylaxis of contagious diseases; inspection of meat and other foodstuffs of animal origin; utilisation of carcasses and slaughterhouse refuse, etc.

The Report details the enormous difficulties encountered by the veterinary services on the Eastern, Western, and South-Eastern Fronts, and in Italy. It emphasises that the organisation improvised in the stress of events as they

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* Translated from a review by E. Leclainche, in *Revue Générale de Médecine Vétérinaire*, 1930. Vol. 39, p. 49.

† *Kriegsveterinärbericht des Deutschen Heeres.* 1 volume of 1,042 pages.

arose in the War, furnished all the good results that could be expected of it: and that veterinary officers succeeded in combating glanders and mange and preserved the lives of hundreds of thousands of animals. In truth, the German armies suffered more than all the rest of the armies of the combatant nations from scarcity of transport animals, and this was one of the causes that contributed towards the exhaustion of the armies and the final surrender. By their efforts in preserving, during several years, the animal strength of the armies, exposed as it was with the lapse of time to a progressively increasing degree to every kind of disorder through lack of sufficient nourishment, the veterinary services made a powerful contribution to the upkeep of the fighting forces.

These services were, moreover, recognised by the army chiefs. The Army Orders of the Crown Prince, dated August 21st, 1915, contain thanks to the veterinary officers for the creation of field hospitals and for the services daily rendered by them. In the army on the Eastern Front, Field Marshal von Hindenburg also expressed his gratitude to the veterinary officers in an order of September 15th, 1915.

Indian Medical Degrees.

Recognition Withdrawn by Medical Council.

"After a controversy lasting over 10 years, the General Medical Council, through its executive committee, has, according to the *British Medical Journal*, taken the important decision of refusing to recognise for the time being the medical degrees of the Indian Universities (Bombay, Calcutta, Lucknow, Madras and Punjab) as furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery in this country," says *The Times*.

"For some years past the recognition given to these degrees has been conditional and been renewed for short periods; the recognition now lapses entirely. 'The roots of this controversy,' it is stated, extend far beyond the immediate point at issue. Many factors enter into the situation, the most assertive at the moment being Indian nationalism, proud, sensitive, instinctively suspicious of British ideals of education and character. Indian customs, like that of purdah, which has limited the opportunities of obstetric instruction (where the trouble began), have to be taken into account. Then there is the necessity which the Indian is under of pursuing his studies in a foreign tongue, so that while his acquaintance with English textbooks may be word-perfect, he suffers often throughout his curriculum from inability to follow entirely the conversational English of the clinic and the examination rooms.

"The further fact has to be reckoned with—the fact out of which, the present Prime Minister once said, the difficulties of government in India arise—that India is a continent of peoples whose civilisation is advancing at different rates of progress. Even the climate, which renders it harder in India than in England to work throughout the three academic terms a year, is not to be disregarded."

Exudative Typhus or Avian Plague in the Psittaci or Parrot-tribe.*

By Dr. Pietro Stazzi, Professor in Charge of Medical Pathology, Royal High School of Veterinary Medicine, Milan.

During the last days of March, 1905, my colleague, Dr. Zerboni, a veterinary surgeon of Gallaratte, brought me the body of a cockatoo (*Kakatoa rosalba*) asking whether I could possibly discover the cause of death. This parrot came from the establishment of a relation of Dr. Zerboni, Signor Schiavelli, of Genoa, who had a business in animals in that town.

A letter† from Signor Schiavelli informed him that the Kakatoa in question had formed part of a group of foreign birds amongst which a serious epizootic had raged, and was still raging, in the end of the month of March, 1905, and which had already attacked some dozens of Colins which had been in the shop in Genoa for six months and which had all died. The contagion had then attacked the Kakatoas and the Australian Parrakeets or Budgerigars (*Melipsiccatus undulatus*), leaving alone certain green small American parrots which had lived for a certain time with the infected birds.

On a *post-mortem* examination of the Kakatoas sent to me I found that the phenomena of decomposition of viscera in the abdominal cavity had already begun, so it was impossible to distinguish the lesions easily. The intestines were congested and covered with light serous and mucous exudations in places; the lungs were œdematous; the pericardium opaque; the aorta and the brachiocephalic arteries had their normal elastic consistency; the meninges were congested; the brain was congested and œdematous. There was nothing abnormal in the mucous membranes of the mouth and nose, pharynx and the cloacal cavity.

From the liver and the spleen cultures were made in broth and in glycerine agar and incubated at 37°.

I obtained in a state of purity a micro-organism which, successfully re-cultivated and studied in its morphological and cultural characteristics, proved itself to be a variety of *Bacterium coli*.

This organism, inoculated in the pectoral muscles of a fowl (1 c.c. of a 24 hour broth culture, 37°), showed no pathogenic manifestations, and was certainly the *Bacterium coli* which lives in the intestines of both healthy and sick birds, and which is frequently separated from the blood and tissues of birds ill from different causes, or killed when cultures are taken some hours after death. Here, in short, are the characteristics of the micro-organism which was isolated: It has a bacillary form from ·6 to ·8μ long and ·4μ wide; is actively mobile, non-Gram-staining, takes fuchsin stain homogeneously, Kuhler's stain, etc.

Cultivated or gelatine plates, it has slow and scanty development, grows yellowish or greyish round colonies, with iridescent margins with yellowish opaque centres on further growth.

* Kindly translated from *La Clinica Veterinaria* of April 7th and 14th, 1906, by Dr. S. H. Fairbairn.

† Dated April 2nd, 1905.

Stab culture in gelatine shows very scanty growth, small round whitish colonies, with an iridescent surface film with irregular margins.

On agar plates—whitish-grey, irregular, round columns.

Agar streak—formation of abundant whitish film, transparent, with iridescent wavy margins.

Broth—homogeneous general turbidity of the fluid, slight sediment, superficial film adherent to glass.

Milk—rapid coagulation.

On plain potato—slight development, yellowish-brown film similar to that of *Bacillus suipestifer*.

The microbe "*forma indolo*": the reaction is scanty and is only clearly positive with Nenki's method, in peptonised water 5 per cent. after five days' incubation.

Pathogenicity.

Sub-cutaneous inoculation, intra-muscular inoculation and administration by the mouth, produced no result in the guinea-pig, rabbit and the chicken. Intra-peritoneal inoculation killed guinea-pigs.

With a sterilised Pasteur pipette, I extracted a certain quantity of blood from the cardiac cavity of the parrot. With a part of this blood I inoculated agar and broth tubes (38°) which remained sterile. With a little emulsion of the liver of the Kakatoa in sterile physiological solution I inoculated subcutaneously a pigeon, two guinea-pigs, a white rat and a rabbit. None of the animals so inoculated reacted in any form.

With the blood in the Pasteur pipette, which had not given rise to the development of any cultures on ordinary media, I inoculated the pectoral muscles of a chicken weighing 750 grammes. Twenty-four hours after the inoculation, the chicken refused food and walked badly when obliged to move, hesitated and showed signs of paresis. Later, the respirations became more frequent; the chicken breathed holding its beak open, with movements of forced expiration. Its crest was red, cyanotic and cold, but towards the third day grave convulsive signs appeared, general tonic contractions which sometimes were accompanied by a true opisthotonos. The animal died in three days.

Post-mortem.—The crest and the wattles were cyanosed; there was violet discoloration of the skin at the point of injection and of the subcutaneous connective tissue below the point of injection; the muscles had a dark yellow colour, with a fibrous exudate among the degenerated muscle fibres. The visceral and parietal peritoneum were hyperæmic and abundant yellowish fibro-serous exudate was collected in the loops of the intestines.

The mucous membrane of the small intestine was uniformly congested and swollen, the two cæca were congested and inflamed, also the rectum and the cloaca; the pancreas was markedly red; the spleen was deep red with softened liquid pulp; the liver increased in size, showed cloudy swelling and incipient fatty degeneration; the gall bladder was full of green bile; the kidneys and supra renal capsules were congested. In the kidneys there were signs of cloudy degeneration. The ovarium was hidden under a sort of red-brown cover formed by blood collected in the surrounding connective tissue. On opening the thoracic cavity, there were small hæmorrhages in the anterior mediastinum and in the connective tissue surrounding the large vessels. There was yellowish fluid in the pericardium which was transparent and of a mother-of-pearl appearance, and numerous petechiæ were present on the epicardium. The blood contained in the heart was fluid and of a dark colour. The myocardium was soft and pale, the endocardium of a mother-of-pearl appearance with ecchymoses below it. The pleuræ were normal, the lungs congested and œdematous, and macroscopically no foci of a true inflammatory process could be recognised. The larynx and pharynx were covered with a mucous exudate.

On opening the cranial cavity we found the meninges congested and the brain œdematous and a few small hæmorrhages in the white and grey matter.

Examination of the blood and fresh tissues showed no micro-organisms, and even by staining with Löffler's blue, with Nichol's thionin, with Ziehl's stain, Liehmann's, etc., no micro-organisms were discovered. Cultures on ordinary media, both ærobic and anærobic, made from various tissues and from the blood of the chicken, incubated for seven days, remained sterile; but the blood of this chicken collected in a Pasteur pipette (about three or four drops) was inoculated into two other chickens, each weighing about 700 grammes. The two chickens died on the third day, with clinical symptoms and general manifestations similar to those presented by the bird already dead.

Blood and tissue emulsions of this bird inoculated into rabbits and guinea-pigs and pigeons, again gave negative results.

We have successfully passed the virus from chicken to chicken, using either blood or emulsion of liver, brain or spleen. Even after the 15th transmission, we have not noticed any appreciable difference of virulence. The animals died on the third day from inoculation, but the symptoms continued to take on more and more the characters of a purely typhus type. The animals stood some hours after the inoculation with the wings drooping, in the position of a brooding hen. The crest and the wattles were also purple. They frequently showed diarrhœa and the fæces were very liquid. They had a disordered and slow gait and just before death some of them presented tonic convulsions. Injections of blood and emulsions of tissues from the dead birds gave negative results on thrushes, sparrows, doves and starlings. In the pigeons, we tried to get over their resistance by using a dose of emulsion sufficient to kill many chickens, first letting the birds fast for four days. But our experiments, perhaps because we used very strong pigeons, gave negative results.

In geese our results were various. Adult geese were not affected by large inoculations. In two geese which were very small and young, each weighing 150 grammes, death occurred three days after the inoculation of virulent blood (the blood and tissues of these young geese were virulent to chickens, but on culture the media showed no growth). Another young goose only after 15 days from the time of inoculation, showed phenomena of ataxy, then of paralysis. The convulsion was rapid, the paralysis became general and the animal died three days after the first symptoms. The blood, brain and medulla of this goose inoculated freely into chickens produced no infection.

I inoculated a chicken which died after three days. In a cage with it I placed a budgerigar which I had received from Signor Schiavelli and which had been living for 30 days in his laboratory, healthy and lively. This bird, on the sixth day of life in the infected cage, began to be

less lively than usual. These birds show a certain gradation in their speech, which, though not actually harmonious, may approximate to song. This bird became completely taciturn and on the seventh day it died in a comatose or typhus state without crying or showing convulsions. In this little animal there were congestive lesions of the abdominal viscera; microscopic examination and cultures were negative. With the blood of this parrot I inoculated subcutaneously a chicken of 450 grammes, a pigeon and a rabbit. The chicken alone proved susceptible. It died on the third day, with signs of a typhus type (coma, diarrhœa, etc.). The pathological lesions, macroscopic and microscopic, were identical with those of the chickens which had died after inoculation with material coming from the cockatoo and from the other chickens which had died from successive inoculations.

To another budgerigar I gave a very strong dose (about quarter of an ordinary Pasteur pipette) of the blood of the last chicken. The animal died in 18 hours. On *post-mortem* I found no definite lesions, only a congestive state of the viscera in the abdominal cavity. The blood of the parrot showed virulence to the chicken, but neither the blood nor tissue emulsion gave any reaction when tried on rabbit, pigeon, or guinea-pig. With a needle dipped into the blood of the dead budgerigar I pricked another budgerigar. This one died five days after the inoculation, with curious symptoms. The bird, which had been eight days under observation, and which had always been lively, began, on the third day after the puncture, to appear uncomfortable. It became quiet, or rather developed a special chatter. Instead of its usual loud cries it made unpleasant noises from time to time. It found difficulty in remaining on its perch in its cage and in keeping its equilibrium, going to the end of its perch to be able to get support by leaning against the side of the cage. If it was obliged to relinquish this support it gave vent to loud cries and tried in vain with its beak and wings to find some other means of holding itself steady. It finished by falling with convulsive movements. Taken out of its cage, it no longer knew how to fly, and when left alone on a table it showed curious rotary movements. At first it turned round from left to right, taking a circular path with a restricted radius which gradually became smaller, so that the animal fell after having made a certain number of turns on its own axis. It then had continuous, almost epileptiform convulsions, rotating about the long axis of its body. When the animal found a point of support it succeeded in maintaining its equilibrium, that is, the body remained constantly in a state of pleurothotonus when it was gyrating or twisting its head. On the whole, the symptoms suggest lesions of the cerebral peduncles, of the cerebellar peduncles, of the cerebellar olivary tract or of the semi-circular canals.

Into two agapornis,* *Agapornis schweideriana*, which were somewhat like melopsittacus in size and in the colour of their plumage, I inoculated a little of the blood of the third budgerigar, which blood had been kept ten days in a Pasteur pipette. One of these agapornis, which had only had one puncture of infected blood, remained lively and cheerful for eight days. Towards the ninth day it began to be uncomfortable and instead of its cheerful screech it emitted a raucous bark at intervals, and showed signs of paraplegia and appearance of circus movements—*e fenomeni di maneggio*. It died on the ninth day. The other, which had been inoculated with some drops of virulent blood, died on the sixth day, with symptoms similar to those of chicken typhus. The blood from this agapornis, inoculated into two young chickens, produced death on the third day with the clinical signs of typhus. The fæces of this love-bird, like the fæces and the pharyngal mucus of some of the fowls dead from this disease, proved virulent; in the special case of the agapornis, a strong American fowl (450 grammes weight), inoculated with an emulsion of fæcal substance collected from the floor of the cage, died on the fourth day, with clinical signs of typhus.

* Central African lovebirds.

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Although we entirely failed to isolate any form of micro-organism which would reproduce the disease from the blood and tissues of the dead chickens, either by ærobic or anærobic cultivation, it appears to be due to a virus similar, if not identical, to the virus of exudative typhus or avian plague and which, similarly, is a filter passer.

A little of the blood taken from the heart of an infected chicken, which had been infected and which had died (typhus type) was mixed with a few c.c. of normal saline: pieces of liver and spleen of the same bird, carefully ground up with sterilised sand, were mixed with a quantity of normal saline, thus giving a fairly transparent liquid. To the emulsions thus prepared, I added, as a filter control, a little of a film of the *Bacillus prodigiosus*, which I took from a vigorous and highly-coloured culture on agar. Using suction by means of a Sprengel's pump, I filtered these emulsions at a temperature of about 15° through new candles of a Chamberland F., Berkefeld W. (low porosity), of a Berkefeld N. (intermediate porosity), and of a Berkefeld V. (high porosity). From none of the filtrates abundantly cultured on agar did the *Bac. prodigiosus* grow. (Nevertheless, it grew freely and in an almost pure state from the emulsions before filtration). The filtrates that had passed through Berkefeld V. and N. proved virulent; those through Berkefeld W. and Chamberland F. were not virulent.

In another series of experiments, in which again we used the *Bac. prodigiosus* as a control, I filtered through the Chamberland F. and the Berkefeld filter under pressure. In the Chamberland I used a pressure of four atmospheres, and two-and-a-half atmospheres for the Berkefeld. Of the filtrates (sterile as regards the *Bac. prodigiosus*) only that which passed through the Berkefeld filter showed virulence.

The fowls inoculated with these filtrates no longer died on the third day, but on the fifth or sixth. In these cases some of the symptoms were rather more accentuated, perhaps because the disease evolved more slowly. The diarrhœa and the cyanosis of the crest were more marked. The nervous symptoms, which had been characteristic of the disease in its first passage through chickens, were completely absent, but in a budgerigar inoculated with a few drops of the filtrate and sucked through a Berkefeld N., death took place on the eighth day and the symptoms were those of a lesion of the cerebellar olivary tract.

We have been able to study only roughly the keeping properties of this virus. We kept some in a Pasteur pipette in the dark but not on ice, at the temperature of the room. Old virus, that is to say blood collected in a

pipette with due precautions, in the months of April, May and June, inoculated in considerable doses in chickens in the month of October, proved to have lost its potency. Some days previously we had inoculated two chickens with October virus (about 90 days) and we had found it still virulent. The two chickens died on the fourth day with the clinical symptoms of typhus.

The autopsy showed congested and inflammatory lesions of the intestine and the peritoneum, which were covered with an abundant exudate. We could not say if the extreme limit of life of the virus in the blood and the exudate was only 90 days. Probably by keeping the pipette under better conditions, say on ice, the life of the virus would be greater.

Liver and brain preserved in glycerine lost their virulence in 30 days, though blood, kept in a Pasteur pipette, was still active. The following was an interesting point: Some of the viruses we tried 50, 60 and 70 days old, had lost their virulence, while the blood of chickens which we had kept a still longer time was still active. For example, blood taken from geese lost its virulence quicker than that from chickens. That of a goose kept 60 days in a pipette was non-virulent. There is no doubt that besides considering the conditions under which the pipette is kept, the manner and the time of taking the blood are important in the question of the life of the virus. Thus, after 45 days, the blood of a chicken, taken eight hours after death, had lost its virulence. This blood became contaminated; the blood remaining in the pipette after inoculation, upon cultivation on agar developed a mobile bacillus. We have also tried the resistance of the virus to temperature. Virulent fresh blood and normal saline emulsion in the proportion of 1 per cent. heated at 75° proved completely innocuous.

Histological Lesions.

We fixed various pieces of tissue of the animals dead from these infections in 7 per cent. sublimate and observed as follows:—

Heart.—Intense myocarditis, muscle fibrous, cloudy, lack of normal striation. The nuclei diminished in number, those remaining appearing swollen and round. Numerous leucocytes. This acute interstitial and parenchymatous myocarditis was not equally evident in all the animals which we studied, and it was specially noticed in the agapornis and the melopsittaci, which died on the fifth or sixth days, and in the cockatoo from Dr. Zerboni. We took transverse sections of the cardiac muscle of the agapornis and melopsittaci and noticed that the inflammatory and degnerative process had especially attacked those parts near the ventricular cavity.

Lungs.—The vessels were enormously dilated and filled with blood. The interalveolar connective tissue, the alveolar cavities and the bronchial tubes were full of red blood clot. We found foci of broncho-pneumonia in some of the fowls that had died with typhus symptoms, the alveoli and the bronchi being filled with a serous exudate with few cellular elements.

Liver.—Intense granular fatty degeneration, hyperæmia and signs of biliary stasis.

Kidneys.—Degenerative and congestive changes. The glomeruli were specially cloudy and paler. Amongst them were numerous hyaline or slightly granular casts. The intra-tubular capillaries and the veins were full of blood.

Intestine.—Pronounced inflammation. The villi congested and swollen, with leucæmic infiltration of the mucosa and submucosa. Considerable desquamation of the epithelium. A granular fibrous exudate with lymphoid cells was frequently found on the superficial serous coating of the intestine.

Nervous system.—Interesting lesions were found in the central nervous system. Marked congestion of the cerebrum, cerebellum and the medulla oblongata with changes in the cells of Purkinje. By using Mann's method the congestive phenomena were more clearly seen, especially the chromalosis and vacuolisation of many nerve cells; but this was not seen in any case either inside or outside the cells of the *heterogeneous corpuscles.* I.—Nervous sympfoms shown by the inoculated animals certainly have connection with inflammatory lesions of the semi-circular canals. II.—From the animals which showed nervous signs we decalcified the whole of the petrous bone. We then made sections of the whole of the internal ear. We found no inflammation, but a little congestion of the vessels of the internal ear, and the perilymphatic spaces of the semi-circular canals were very full of blood.

Conclusions.

To sum up the results of our researches, we may conclude:—

Among the psittaci there can exist a disease with epizoötic characters which suggests septicæmia in its pathology and symptomatology. The disease is caused by a virus which is undoubtedly present in the blood and in all tissues but cannot be found microscopically or cultivated on ordinary media. The virus passes through the Berkefeld filter not as a toxin but as a true living virus, capable of infecting susceptible animals, such as the hen and the goose. These results appear more than enough to prove that the disease we have described belongs to the group known as typhus or avian plague. It is well known under this name and under that of cyanolophia, or epizoötic peritonitis, etc. In recent times many others have described a rapidly spreading infectious disease, of a septicæmic type and very fatal, which is due to an invisible filter-passing micro-organism (hitherto not successfully cultivated outside its host) which attacks fowls, geese, thrushes and pheasants.

Centanni and Savonizzi, Maggiora and Valenti, Calamida, Marcone, Lode and Grüber, Scheuerlen and Buhl, Ostertag, Wolfhugel, etc., have described various epizoötics of exudative typhus in domestic fowls. Marcone has lately described an epizoötic of plague in the pheasantry of Capo di Monte. The epizoötic among pheasants coincided in point of time with another identical disease of chickens in that district and the bodies of sparrows and goldfinches were frequently found in the royal park of Capo di Monte. Marcone reproduced the disease in chickens, using the blood, exudation and particles of the organs of the dead pheasants and filtrates of the infected birds (Chamberland and D'Arsonval). Maggiora and Valenti noticed an epizoötic type of disease in thrushes which, both clinically and in the nature of its virus, was very similar to exudative typhus in the chicken. We considered whether the infection which attacks parrots constitutes a new morbid entity, or whether it was nothing

more than a variety of exudative typhus of chickens which had become adapted to the psittaci. We asked Signor Schiavelli if any chicken, pheasant or other domestic bird, had been brought into his shop which could have carried an infection of the exudative typhus of fowls. He replied that the disease had begun in his establishment on April 9th, attacking a pheasant, then partridges, and thence to cockatoos, and adding that he had never had a chicken in his shop. The pheasant, which died first, had arrived the week previously, apparently in good condition, from a pheasant-breeding establishment. This news seemed to be more in favour of the hypothesis that the infection of parrots is nothing but a form of exudative typhus of chickens attacking these foreign animals. The interesting observations of Marcone and the experimental operations made on pheasants of the exudative typhus of fowls by Maggiora, show the probable correctness of this view as regards the origin of this parrot disease.

We inoculated a strong cock pheasant (1,250 grammes) with a few drops of blood in normal saline from a chicken recently dead of the disease. A quintuple dose was inoculated into four sparrows. These showed no trace of infection and remained well, and are still well 28 days after the injection. The pheasant showed the nervous form of the disease on the third day after infection. We found it in its cage, with its beak on the floor, its legs, neck and head immobile, but flapping its wings. Taken from its cage, it remained some time in the position of a brooding hen. Its neck was flexed, its plumage ruffled, and it showed convulsive opening and closing of the eyes. After some time other convulsive phenomena appeared. It rocked its head backwards and forwards and from side to side, and appeared to be suffering from vertigo, flapping its wings and rotating about a longitudinal axis with furious movements of its wings and legs, and dying in one of these attacks. An autopsy was performed at once. We found a severe enteritis almost limited to the duodenal loop, a swollen and soft spleen, congestion and cloudy swelling of the liver and kidneys, fluid in the pericardium, extravasation below the epicardium, myocarditis, hyperæmia of the lungs and of the meninges. Microscopical examinations of tissues and blood were negative.

A chicken which was inoculated subcutaneously with exudations of this pheasant, died with typhus in 68 hours. From this result it appears that the infection which attacked these parrots was a form of chicken plague carried from the pheasant to these foreign birds. The facts in support of this view, that is that the virus of the infection of parrots is nothing but a variety of avian plague, seemed very evident.

I do not think, considering the present-day knowledge of the filtration of a similar virus, that much weight should be given to the fact that our virus does not pass through Chamberland F. through which the virus epizoötic of fowls and pheasants does pass. (Centanni, Maggiore, Marcone.) It should be remembered, on the other hand, that the parrot disease virus is not pathogenic to sparrows, even in massive doses, though they appear susceptible to exudative typhus of fowls. But many observations show us how the virus of avian plague often presents notable variations in its behaviour towards some domestic birds, particularly the pigeon. Certain observers have not succeeded in separating a virus pathogenic to doves from the virus of avian plague (Centanni and Lode found the virus of avian plague to be pathogenic to pigeons, while others, and they are more numerous—Maggiore, Kunnermann, Hortel and Ostertag—did not do so).

Finally, we will say:—

In some foreign birds such as *Kakatoa rosalba*, *Melopsittacus undulatus*, *l'Agapornis schweideriana*, avian plague can be transmitted, and this disease can take on, in these animals as in domestic fowls and pheasants, the characteristics of a serious epizoötic with clinical signs of a typhus or nervous type. Sometimes it is chiefly characterised by great prostration which continues almost without exception to increase until death, and which sometimes is accompanied by diarrhœa and sometimes by convulsive and paralytic phenomena. The clinical syndrome in these cases is similar to that of disease of the cerebral peduncles, cerebellar peduncles or, still more, of the cerebellar olivary tract.

The Veterinary Record.
March 29th, 1930.

The Parrot Scare.

We publish elsewhere in this issue a translation of an able treatise by Dr. Pietro Stazzi, an Italian veterinary surgeon, upon "Exudative Typhus or Avian Plague in the Psittaci or Parrot-tribe." This article comes opportunely, in view of the fact that for several months the population of this country has been considerably perturbed over the incidence of mysterious illnesses (some of them fatal) among human beings, which have sometimes been attributed to infection from sick parrots.

Altogether some 40 cases of suspected human psittacosis have been reported in the British Isles since July of 1928, and all of them are said to have been directly or indirectly associated with a sick bird. As a consequence, a considerable section of the community has been quite unduly alarmed, and has ordered the destruction of hundreds of tame, unoffending, healthy parrots—pets which for years had been respected members of countless households.

It was stated by Nocard in 1892 that the *Bacillus psittacosis* was the cause of psittacosis in parrots; but there appears, as yet, to be no exact or reliable knowledge concerning the etiology of psittacosis (or a disease which simulates it) in man.

A memorandum upon the subject, issued recently by the Ministry of Health, states that "the presence of the *Bac. psittacosis* has not yet been discovered in any of the recent English cases or in the birds associated with them." Indeed, there is a considerable volume of evidence accumulating in favour of the view that this mysterious human

malady is due to a filtrable virus. Research which has been conducted by Doctors Bedson and Western at the London Hospital, most definitely points to this as a fact. They said that in every case of human disease of alleged bird origin examined by them at the hospital, any evidence of infection by the *Bac. psittacosis* was absent, and in every case the bacteria-free blood produced in birds a state indistinguishable from psittacosis.

The observations of Stazzi also show that the exudative typhus and septicæmia of parrots is due to a virus and not to a visible organism.

Somewhat by way of negativing this testimony Professor Lewis (Assoc. Prof. of Public Health in Birmingham University) stated at an inquest held at Birmingham on February 20th, that " he had recovered the *Bac. psittacosis* from the fæces of the sick parrot which was living in the deceased's home. The organism proved fatal to guinea pigs, and he had no doubt that illness—(and possibly fatal illness) would result from human infection with the germ." There was, however, no evidence offered by any of the medical witnesses that a similar organism had been identified in the body of the deceased man; and although the malady of the parrot might well have been caused by *Bac. psittacosis* there was no proof that the illness in the man had a similar cause. Part of the jury's verdict in this case was to the effect that parrot infection had not been established.

In 1920 Perry showed that *Bac. psittacosis* was identical with *B. œrtrycke*—a food poisoning organism—which produces in birds a condition very similar to psittacosis. It produces typhoid symptoms in man, which may be severe enteritis or consist merely of headache and pyrexia, and sometimes diarrhœa. This germ is not peculiar to the parrot, but can be contracted and carried by rats and mice.

Psittacosis is by no means a new disease; it has been known for over 50 years, and there is little evidence to lead one to imagine that its incidence in birds, all over this country, has not been quite regular, although perhaps undetected, during this period. It is only when a human death occurs, which is thought to have some connection with a sick bird, that attention becomes focussed upon the matter. Thereafter, any illness which happens to occur in a house where there is an ailing parrot, is assumed at once to be attributable directly to the latter.

We hope it is significant that only 40 cases of alleged psittacosis have been detected in a population of some 48 million over a period of nine months, especially when it is considered how ubiquitous are parrots, budgerigars and other birds throughout the country.

Abstracts.

[**Studies in Bovine Mastitis. I. The Bacteriology of Mastitis.** F. C. Minett, A. W. Stableforth and S. J. Edwards. *Jour. Compar. Path. and Therap.* Vol. 42, pp. 213-231. 1929.]

This article contains a survey of the predominant bacterial species isolated from 113 samples of udder secretion from cases of mastitis. The cases were not specially selected and the samples were collected in most cases by practising veterinarians. The bacteria present were: streptococci in 82, staphylococci in 6, *B. pyogenes* in 21, Gram negative bacteria in 3, and *B. necrosis* in one. Mixed infections were rare. This list gives some indication of the variety of bacterial types which may at times cause disturbance within the cow's udder and illustrates the complicated task confronting the investigator and the person whose duty it may be to carry out methods of control. Even so, the list is not comprehensive and does not include all bacterial types which may cause mastitis, *e.g., B. tuberculosis.*

Streptococci.—A recognition of the types of streptococci associated with mastitis is of the first importance and the article contains a review of the more important literature on this subject. Culturally and biochemically the 82 strains of streptococci belonged to a fairly well-defined type which has been referred to in the literature as *Streptococcus mastitidis.* The main characters of this type are flocculent growth in broth, composed of long chains, acid and clot in litmus milk with partial reduction, production of acid in glucose, lactose, saccharose, salicin (usually), no acid production from mannite, inulin or raffinose. The conclusion that streptococci of this type occurring within the udder are parasitic forms and are not present under normal conditions is supported by this work. Such streptococci, however, may be present in the udder for long periods without causing clinical changes.

By cultivation in blood agar the 82 strains could be differentiated into two groups, namely, hæmolytic (52 strains) and non-hæmolytic (30 strains). The characters of the hæmolytic strains, with one exception, were closely similar to one another. On the other hand the non-hæmolytic strains showed greater diversity and this group could be again divided into two sub-groups. Except for their effect upon blood the strains of the first sub-group resembled those of the hæmolytic group. The second sub-group could be distinguished by a greater tendency to short chain formation in broth and by their appreciably lower acid production from glucose, lactose and saccharose and by lower activity in acidifying and clotting milk. The significance of these differences within the *S. mastitidis* group and the possible relationship of such differences to clinical effects are matters which require further study.

Hæmolytic streptococci from the cow's udder resemble in certain respects hæmolytic streptococci from other sources, *e.g.*, from pathological conditions in man, and from

the public health point of view the importance of distinguishing streptococci from human and bovine sources has been recognised. For this purpose American workers have drawn attention to the fact that hæmolytic streptococci from the cow's udder have the power of hydrolysing sodium hippurate, whereas streptococci from pathological conditions in man do not possess this power. It has also been suggested that the amount of acid produced during cultivation in glucose broth may be used as a means of distinction. In 1·0 per cent. glucose broth bovine streptococci are said to produce relatively larger amounts of acid than streptococci from man. These two tests have been applied to the present series of mastitis strains and to seven hæmolytic strains from pathological conditions in man, including four strains isolated from cases of scarlet fever. It was found that the majority of the mastitis strains were capable of hydrolysing sodium hippurate and of reducing the *p*H of 1 per cent. glucose broth to 4·4-4·8, but these two properties were far more constant with the hæmolytic type than among the non-hæmolytic. Among the latter nine out of 28 strains failed to split hippurate and 12 out of 24 gave a final *p*H of 5·0 or over in glucose broth.

It is to be noted that practically all these hippurate-negative and low acid-producing strains of the non-hæmolytic series were included in the second sub-group of this series referred to above and that in respect of these properties and of incomplete coagulation in milk these strains resembled the seven strains of hæmolytic streptococci from human sources introduced for comparison.

The pathogenicity of the mastitis strains for rabbits and mice was low, though on the whole higher among the hæmolytic strains. Two hippurate-negative hæmolytic strains were exceptionally virulent for rabbits, the M.L.D. intravenously being approximately 0·1 and 0·001 c.c. 24 hour serum broth culture. In the non-hæmolytic series the strains of the second sub-group were more pathogenic than those of the first sub-group.

Staphylococci.—Mastitis due to staphylococci has not received as much attention as the more common streptococcic form. Staphylococcic mastitis is of importance, however, because although apparently less common, the clinical course of the disease is frequently more acute than is usual with streptococcic mastitis. In the present series of six animals affected, two died and a third had to be slaughtered; in one of the two fatal cases the udder tissue had become gangrenous. Five of the cases occurred within the first few days after calving. In the more acute stages the secretion from the udder may consist of a thin reddish-brown fluid somewhat resembling hæmolysed blood.

Culturally and biochemically the six strains isolated appeared to belong to a single group. Colonies on agar were pale fawn, acid was produced from glucose, lactose, saccharose and mannite but not from salicin or inulin, litmus milk was rapidly acidified and clotted, gelatin was liquefied, deep colonies in blood agar were surrounded by zones in which hæmolysis was incomplete. Strains were moderately pathogenic for rabbits and mice; one strain showed in rabbits a tendency to localisation in the kidney.

B. pyogenes.—It is now well recognised that this organism is the most frequent cause of so-called "summer mastitis" which occurs principally in the summer months among dry cows at pasture. Nearly all of the 21 cases in the present series occurred in dry cows shortly before calving and with one exception all cases were observed in the second half of the year. In seven cases constitutional symptoms were noted and in most instances the affected quarter was reported to have lost its function.

B. pyogenes belongs to the diphtheroid group of bacteria and its principal characters are as follows. Morphologically, the organism appears in the form of small, Gram positive rods which are present in large numbers in the udder secretion. The organism is hæmolytic in blood agar, possesses the power of acidifying and coagulating milk with subsequent digestion of the clot and is also capable of liquefying gelatin and solid blood serum. The 21 cultures in the present series possessed these type characters.

Gram negative bacteria.—Of the three cases from which these bacteria were obtained one was severe and showed systemic disturbance with subsequent loss of the quarter; the other two were mild. In the severe case gas bubbles were noticed to be present in the secretion as it was drawn from the teat and the organism isolated was a hæmolytic variety of *B. coli.* The bacteria associated with the other two cases belonged to no well-defined type, but one strain in some respects resembled *B. proteus.*

B. necrosis.—Mastitis due to this organism has been rarely described. Necrotic lesions appeared in one quarter of the udder of a six-year-old cow and were accompanied by lesions in one of the carpal joints. The animal showed some systemic disturbance and during the few preceding weeks had lost condition. The animal recovered but six months later the affected quarter was greatly atrophied and had lost its function. The causal organisms were present in large numbers in the thick muco-pus from the udder and from the affected knee joint. They were identified as *B. necrosis* by their morphology, by their strict anærobism and by their pathogenic effects upon rabbits.

[**A new Caponising Instrument.** Dr. Westhues, Surgical Clinic of Giessen Veterinary School. (B.T.W. 1930, No. 1).]

Owing to the increase in poultry breeding in Germany, there is a correspondingly greater demand for caponising. Dr. Westhues mentions that the majority of modern

FIG. 1.

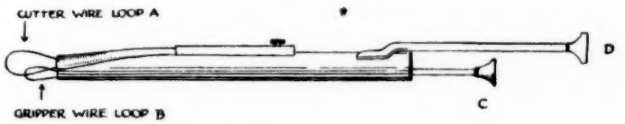


FIG. 2

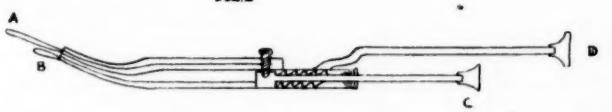
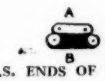


FIG. 3



C.S. ENDS OF TUBES.

One presses C forwards to make the loops emerge from their tubes, and passes them together round the testicle. Then press D, which causes loop B to hold the tissues against the bridged end of its tube, whilst the loop A is drawn right into its tube and severs the tissues *en route. Figs. I and II are copied from the "B.T.W." Fig. III is the Abstractor's.*

caponising instruments work on the principle of torsion, by which testes are removed and hæmorrhage prevented. As the testes lie in very loose connective tissue, such instruments must cause much laceration to the local soft tissues and blood vessels may easily escape crushing: also the kidneys are liable to be injured. Mortality from such is given as 3 per cent.

Dr. Westhues has designed an instrument which avoids torsion and provides a firm grip for the testicular blood vessels.

As can be seen from the figures, the instrument consists of two tubes out of each of which protudes a wire loop, which can be drawn in by pressure on the part D. Pressure on part C has the opposite effect, for when they are slipped round the testes, when D is pressed, the loop B is stopped by a bridge piece at the end of its tube, and it is against this that the testicular attachments are compressed whilst the other loop A, which can be pulled right into its tube, severs them and cuts off the testis, which must then be removed from the abdominal cavity by forceps. For 3-month-old birds, the compression should be maintained for 5-10 seconds: they should be starved for 24 hours prior to the operation. The abdomen is entered between the last two ribs.

Even large cocks can be caponised by this instrument without much fear of hæmorrhage.

J. T. E.

[**Parrot Disease (Psittacosis).** Clementi, *Deutsche Tierarzt. Wochschr.*, 1930, 38, 3, 40.]

In July and August, 1929, in Córdoba (Argentine) a disease, of an infectious nature and unusual symptomatology, broke out amongst the human population. Pneumonic, broncho-pneumonic or pleural processes and often the simple phenomena of an unclassifiable sore throat were seen. Pronounced asthenia, nervous symptoms, stupor, delirium, high temperature, cough, protracted course, refractory convalescence and high mortality were characteristics. The general medical opinion was that the disease was of the nature of "influenza," but Dr. Enrique Barros suspected psittacosis as, at the time, this disease was very prevalent in birds, particularly parrots, in the same district. The disease continued to spread and got as far as Buenos Aires.

Note by Editor (*D.T.W.*):—

Psittacosis has been observed by us in various large towns (Berlin, Hamburg, Vienna) during the last few weeks. It was introduced by parrots and followed the broncho-pneumonic course as above described. In parrots, the disease appears in the form of a more or less severe hæmorrhagic inflammation of the bowel, ending in death in three to five days. Further symptoms are ruffled feathers, drooping wings, indifference and sleepiness, foamy, liquid, greenish fæces, usually with a bloody admixture.

J. H. M.

Approximately one-third of the cattle and one-fourth of the sheep slaughtered in eight different slaughter houses during 1925-26 in Bulgaria, were reported to be affected by echinococcosis. This condition is also relatively common in the human in Bulgaria as 66 cases were found in 8,653 autopsies in one hospital.—*Bio. Abst.*

Divisional Reports.

Lancashire Division, N.V.M.A.*

Officers Elected at Manchester Meeting.

Discussion on the Scottish Scheme for the Eradication of Bovine Tuberculosis.

A General Meeting of the Lancashire Division was held at the Grand Hotel, Aytoun Street, Manchester, on Wednesday, January 16th, 1930, at 2.30 p.m.

The Chair was occupied by the President (Major W. G. Burndred) and other members present were Messrs. H. H. Aldred, A. W. Noel Pillers, G. Mayall, G. H. Locke, R. C. Locke, J. O. Powley, J. Mackintosh, T. J. Millington, W. Woods, J. Holroyd, E. H. Curbishley, W. Tweed, J. Spruell, and H. A. Turner.

Apologies for unavoidable absence were received from Messrs. E. L. Butters, Warwicke Fowle, H. S. Caldwell, P. Manuel, H. T. Matthews, T. Eaton Jones, H. L. Torrance, K. D. Downham, P. T. Lindsay, J. K. Shaw, Col. Brittlebank, Prof. Gaiger, E. F. Wood, R. Hughes, T. A. Dobie, and K. D. Downham.

The minutes of the previous meeting were read and approved.

Obituary.—Mr. Woods said it was his sad duty to refer to the death of their esteemed member Mr. McKinna, who was a man who was loved by everybody and who did everything in his power to further the interests of the profession. He moved that a letter of condolence be sent to his relatives.

Mr. Curbishley, in seconding, said that Mr. McKinna was an old member of the "Lancashire" and everybody had a great affection for him. He was a gentleman in every sense of the word and his death was a sad blow to the profession.

The motion was carried, the members standing in silent tribute.

Correspondence.—(1) From the Vice-Chancellor of the Liverpool University, acknowledging with thanks the receipt of a donation to the Equipment Fund.

(2) From the Secretary of the Royal Sanitary Institute inviting the Division to appoint delegates to the Congress to be held at Margate in June, 1930. It was resolved to invite Col. Brittlebank to represent the Division at the Congress.

(3) From the Secretary of the 11th International Veterinary Congress to be held in London in August, 1930. The President was appointed a delegate to the Congress.

Resignations.—Letters of resignation were read from Messrs. H. L. Torrance, R. E. Hoile, J. E. Holroyd, and J. Hall. The first two gentlemen had left the district and the last two had resigned through illness. Mr. J. Holroyd proposed, and Mr. Curbishley seconded, that the resignations be accepted with regret, that letters of sympathy be sent to Mr. Holroyd and Mr. Hall, and that a letter of congratulation be sent to Mr. Torrance on his obtaining a new appointment. The proposition was carried unanimously.

Election of New Members.—Mr. Powley proposed, Mr. Woods seconded, and it was unanimously resolved that

* Received on March 1st.

Messrs. Allan J. Wright, M.R.C.V.S., Macclesfield; G. O. Davies, B.V.SC., M.R.C.V.S., Liverpool; and H. A. Turner, F.R.C.V.S., Manchester, be elected members of the Division.

Election of Officers.

The Meeting now proceeded to the election of Office-Bearers and Council for the year 1930.

President.—It was proposed by Major Burndred, seconded by Mr. Woods and unanimously resolved, that Mr. E. H. Curbishley, M.R.C.V.S. be elected President for the ensuing year.

Mr. Curbishley, expressing his thanks for the honour, appealed to the members for their support and encouragement. He had drafted a programme of meetings for the year and he hoped that the members would make efforts to attend every meeting and bring along interesting cases and specimens. He would appreciate the honour yet more if he could secure the support of the members by their attendance at meetings in representative numbers.

Vice-Presidents.—It was unanimously resolved that Messrs. W. G. Burndred, J. O. Powley, and P. T. Lindsay be appointed Vice-Presidents.

Hon. Treasurer.—Mr. A. W. Noel Pillers was re-elected Hon. Treasurer.

Hon. Secretary.—It was resolved that Mr. John Spruell be re-elected Hon. Secretary.

Hon. Auditors.—Messrs. T. Dobie and J. H. White were elected.

Council.—The following were elected: Messrs. H. H. Aldred, J. W. Brittlebank, F. G. Edwards, S. H. Gaiger, J. Holroyd, F. Hopkin, G. H. Locke, J. H. Wright, T. Wilson, and W. Woods.

Representatives on Council of the N.V.M.A.—It was unanimously resolved that Col. Brittlebank, Prof. Gaiger, Mr. J. H. Carter, and the Hon. Secretary be appointed representatives of the Division on the Council of the N.V.M.A.

It was also unanimously resolved that the Committees of the Lancashire and Cheshire Veterinary Inspectors be composed as during the past year.

Candidate for Council of the R.C.V.S.—Major W. G. Burndred was nominated as candidate for the Council of the Royal College of Veterinary Surgeons.

Title of the Division.—A short discussion took place with reference to a suggested alteration of the title of the Division, and, on the proposition of Mr. Tweed, seconded by Mr. Woods, it was unanimously resolved that the matter be deferred until a future General Meeting.

Discussion on "Scheme for the Eradication of Bovine Tuberculosis," Proposed by the West of Scotland Division.

The President stated that the Hon. Secretary had received a letter from Col. Brittlebank expressing his regret at being unable to attend the meeting, at the same time raising points which would materially add to the discussion. The letter was read as follows:—

"Dear Mr. Spruell,

"I am sorry that the pressure of work prohibits my being present to take my humble part in the important discussion due tomorrow and shall be obliged if you will tender to the President my sincere regrets.

"At the same time, I may perhaps be permitted to say that however much I may disagree with the scheme put forward by our friends of the West of Scotland Division of the N.V.M.A., I would like to pay my tribute to them for again bringing forward this undoubtedly important question.

"I have already said that I do not agree with the scheme, and I do so for the following reasons:—

1. That it has not the slightest chance of being adopted at present, on financial grounds alone.
2. That because of the very widespread nature of the distribution of tuberculosis, the possiblity of success is remote.
3. That, far as we have got in our knowledge of the disease, there is much yet we do not know.
4. That there is, apart from our lack of knowledge in many directions, an enormous preliminary work in the improvement of housing, breeding, and feeding of our stocks to be done before any such schemes can be safely considered.
5. That in the very large amount of work which has been already done it has been clearly demonstrated that the clearing and maintenance of herds free from tuberculosis is by no means the simple and comparatively mechanical task it is frequently represented to be.

"These headings briefly summarise my position, but I am bound to confess that this was not always my attitude, and that at one time I was perhaps the keenest advocate in this country of the adoption of a great scheme for the clearance of bovine tuberculosis.

"I find, for instance, that on June 6th, 1908, I read a paper before the Midland Veterinary Medical Association in which I laid down a scheme very much the same as the one under discussion and very definitely expressed my belief in the soundness of my proposals, advancing what appeared to me at the time ample arguments in support.

"Nearly 22 years have elapsed since then and my experience has accumulated to an extent that has compelled me to admit to myself that the propositions I then put forward were not practicable or sound, and I can assure you that such admissions are not easy to make, but if one is honest with oneself then no half-way course is possible.

"I have, however, by no means lost my faith in the valuable work that our profession can do and my sense as to how important it is that they should be given an opportunity to do it. I may now perhaps be permitted again to advance my views as to what is, in my opinion, the correct policy for us to advocate:—

(*a*) First, that there shall be established throughout the land a complete and co-ordinated Veterinary Health Service.

(*b*) That the service should consist first of a nucleus of whole-time Veterinary Officers assisted largely by part-time staffs.

(*c*) That the whole questions of Animal Health and Animal Husbandry should be under the control of this service.

(*d*) That one of the first objects to aim at is the systematic and the complete clinical examination of every dairy animal.

(*e*) That such a service would immediately undertake a complete review of essential questions of animal housing, breeding, feeding, etc., etc., and commence a definite campaign of reform.

"Such a service, properly organised and administered, would be of enormous benefit to agriculture and would soon recoup its cost, and would, I believe, in a few years bring within the bounds of practical politics the question of the total eradication of tuberculosis.

"In advocating the propositions I have above enunciated I am persuaded that, fundamentally important as tuberculosis may be in itself, it is a mistake to regard the whole question of animal economics from this single angle, as there can be no question that there are many other problems of almost, though possibly not quite, equal significance to the individual who has to get his living in the particular branches of agriculture which interest us most.

"I cannot refrain from again expressing my appreciation of the great service done by the West of Scotland Division in again giving us an opportunity of expressing our views.

Yours sincerely,

J. W. Brittlebank."

Mr. Woods said he had written down a few ideas that might form a basis for discussion and, although they were not really considered opinions, he would read them to the meeting:—

"Let me commence by saying that, in my opinion, this is the most important subject that has been brought before this or any other Veterinary Society for a long time. The fact that we can seriously discuss the complete eradication of tuberculosis in this country, so far as dairy cattle are concerned, shows a tremendous advance, both of public thought and scientific opinion. America has led the way in showing how it can be done and is being largely successful. Of course the problem over here is more difficult because of the much larger percentage of affected cattle which, in this country, I suppose, will reach as high as 30 or even 40 per cent., while in America, including Canada, the percentage is only from 5 to 8 per cent. The practical difficulties in our case are enormously increased. Whereas it would not be of serious loss or inconvenience to take 5 out of a man's 100 cows in order to free his herd, to take 30 or 40 out of his herd would so dislocate his business as to be almost ruinous. But that is the problem we have to face.

"Now what are the inducements to encourage us to face this problem? First of all, what are the losses involved by leaving the problem untouched? In actual coin of the realm the answer can only be an estimate, but it cannot be less than one million pounds per annum and might easily be twice that or more. Then again, we have the estimate of the actual loss of human life. It has been somewhat loosely stated or estimated that from 5 to 10 thousand children die every year from tuberculosis of bovine origin. This seems to me an appalling statement and one demanding, from the point of humanity alone, tremendous sacrifices from our people, if it can be shown that there is any hope of success in stamping out this terrible plague. Then the next question comes:—Can it be done? Of course, by stamping out the whole of the cattle population, it could be done, or by testing and slaughtering all reactors, but short of that, can it be done? That is the problem we have to solve and I believe the answer is that it can be done if we can rouse public opinion to compel the Government to find the necessary money. This, in the country's impoverished condition, is going to be a tremendous impediment and it will require a tremendous weight of public opinion to find the 20 million pounds or more to make the scheme successful. Of course that amount would not be required in one year, but, even so, we paid that much to buy freedom for the American slaves—surely we can spend as much to save the lives of these thousands of our own children.

"Now as to the scheme itself, it will have to be done in areas as in the American plan and, in this geographical method, every plan seems to bristle with difficulties. Suppose, for instance, you commence with the least affected areas in this country. You could, for example, take Cornwall and Devon which, from the Ministry's returns, appear to have a low incidence of tuberculosis. Cut all catttle traffic off from the remainder of the country, test and slaughter every reactor in that area and make it the breeding district from which the rest of England could be supplied with tubercle-free cattle. South Wales and, say, the East Riding of Yorkshire, could also be similarly made into free areas—breeding areas from which unclean areas could be supplied with healthy cattle, while no cattle should be allowed into the clean area unless they had passed the tuberculin test, had been isolated and retested at the end of 60 days. By this method we have an initial difficulty which seems to me insoluble in that, in so many parts of England, you have breeds of cattle which are not successful in other parts. Devons, for instance, are not much seen north of the Bristol Channel. Herefords are not much seen north of the Midlands. Probably the cross-bred shorthorn would gain the majority of votes, but there are districts where there are special breeds which the district would be sorry to lose; but difficulties are things to be overcome.

"So far as Scotland is concerned, the Veterinary Profession have a considerable scheme which, if they can get the necessary funds, they feel has great hopes of success. In England I would commend a thoughtful and constructive paper read a few weeks ago by Mr. Rabagliati, who has evidently given the subject much attention. I would like to emphasise that the extermination of tuberculosis has passed the academic stage and has become a practical question and, although we should seek the co-operation of the Medical Profession, I am anxious that we should be the first in the field. I should therefore like to see a Committee of the N.V.M.A. appointed to draw up, after our various discussions, a workable scheme which might reasonably have hopes of success. In the meantime, of course, Calmette and Guèrin may have produced a vaccine of prophylactic value, but, if so, a double cure to stamp out the disease should not make us hesitate to proceed with our efforts in other directions."

Mr. Tweed said he could only repeat what he said at a meeting of the North Midland Division, the proceedings of which were published in the *Veterinary Record* a few days ago. He had recently been reading some figures published by the Gloucestershire County Council and they proved conclusively that the greater the number of samples taken, the greater was the number of cases of tuberculosis detected. He thought that the Tuberculosis Order should be extended to deal, by slaughter, with reactors to the tuberculin test, and he suggested that Local Authorities be empowered to slaughter all reactors in their own areas. This scheme could be made practicable if the Ministry took control and the local Veterinary Officer were made responsible for reporting to the Ministry all reactors to the tuberculin test. A period could be fixed for the purpose of keeping such animals isolated, so that the farmer could utilise the milk if he so wished; but, of course, a limit to the period would have to be made. The Ministry might demand that an annual test be made of all the dairy animals to ensure that the scheme was being worked properly. Mr. Tweed thought that the adoption of a scheme of that description would have far-reaching results. In view of past experience he did not believe in voluntary enterprise, as one met with a number of failures and disappointments.

Mr. Mayall said: "Can tuberculosis in cattle ever be uprooted? Can it ever be eradicated in the human subject? Scientists tell us that the danger and spread of inter-human tuberculosis is far greater than that from bovine to man. If an exact test for it on humans by the medical profession could be conducted, how many of us would escape a reaction? Not many, I fear. I have faith enough, however, to believe that the presence of tubercle bacilli in cattle can be considerably reduced, and I believe that its incidence is being lessened by present-day methods. These only need strengthening and tightening up and some first-prize herds, as regards paucity of tuberculosis, will be built up by the keenest scientific methods. In this connection I am rather surprised that in the discussion on the Scottish plan no mention has been made with regard to 'children's cows and children's milk.' The establishment of herds up and down the country under strict veterinary supervision in the well-known ways would be a step in the right direction as regards infection in children. The formation of tuberculosis-free herds is a matter that can only proceed slowly. Everything here nowadays seems to be pervaded with Americanism—it has even invaded the study and management of this disease. People who compare us with the Americans in dealing with tuberculosis have forgotten their history and geography. The States and Canada did good by impressing on us the value of the intradermal test, but that seems all. At all events, the incidence of bovine tuberculosis there, judging by the results of the tuberculin test, seems to be considerably less than in this country. Dr. Savage in his recent book on 'The Prevention of Human Tuberculosis of Bovine Origin' comes to the following conclusions as far as human tuberculosis is concerned:—

(1) Routine dairy inspection, unless fitting in with a wider and more comprehensive scheme, is of little real preventive importance.

(2) He favours a more active educational campaign.

(3) He considers that the onus of preventing tuberculous infection should be placed on the cow-keeper (he does not mention any responsibility of the landlord in this connection).

(4) He stresses the importance of reporting all suspected cases.

(5) He advocates good feeding, hygienic care, immunisation experiments, formation of tuberculosis-free herds, operation of a modified Tuberculosis Order, routine veterinary inspection of cows and, perhaps most important of all, active co-operation with the cow owner. He does not consider it is worth while, for the small measure of reduction of human tuberculosis which will accrue, to continue any partial measure such as the Tuberculosis Order, an inadequate system of veterinary inspection or occasional milk sampling for the tuberculosis bacillus. If the agricultural community is not prepared to co-operate actively in the measures of the State and local authorities, he considers (as far as humans are involved) that bovine tuberculosis must be left to those dealing with animal diseases, and milk for human needs should be pasteurised. This book of Dr. Savage is an illuminating and very readable one, and all those interested in the problem should read it. In one portion he rather throws cold water on the results produced by routine inspection.

"Statistics, it is said, may be used to prove anything, and those the doctor gives all seem to indicate that systematic inspection of dairy cattle does not reduce the number of cases of tuberculosis. I have declared my faith in the fact that it does.

"With regard to open tuberculosis, the adoption of the Ostertag method resulted in a reduction from 2·7 per cent. to 1·3 per cent. in four years in East Russia, from 2·93 per cent. to 0·6 per cent. in Pomerania, from 3·46 per cent. to 1·5 per cent. in Brandenburgh, from 2·8 per cent. to 1·93 per cent. in Schleswig Holstein, and from 3·6 per cent. to 2·41 per cent. in Saxony. In all cases far more cows were included in estimating the lower percentages. The value of the reduction was also shown as regards lessening of hog tuberculosis. The percentage of tuberculosis in creamery hogs, which amounted to 40 per cent., was reduced to 4 per cent. after elimination of six cattle with tuberculosis of the udder. It is true that after a time results with this method are not so favourable and come perhaps to a standstill, but here, up to now, there is plenty of work to be done before the standstill position is reached, as the experience of many veterinary surgeons will support. I find that the funds for the tuberculosis campaign are at present provided by the Ministry of Agriculture, the Municipalities, the County Councils, and the Urban District Councils. I think that it is a great blessing from the point of view of the majority of veterinary surgeons that this is so. The work is better sprinkled about and those that have borne the heat and burden of the day are less likely to be forgotten. I think that better prices should be given as compensation to the farmer for cows confiscated, and especially so when these are in full milk. Latest statistics show that the figures for human tuberculosis are declining. Talking to a medical man recently who deals with this matter exclusively, he put the decline in tuberculosis in children down to their better feeding and housing. Is it too much to suppose that the activities of the men, metaphorically in the stokehold, have had their effect on the progress of the ship? In my district the better housing and care of cattle within recent years has had its due effect."

Mr. Holroyd was much interested in the points raised by Col. Brittlebank, and agreed with him that the scheme was impracticable on financial grounds alone. The cost would be enormous and too much to expect from any Government. He did not agree with Col. Brittlebank's proposals for a Health Service with a nucleus of whole-time veterinary officers, as it would eventually mean that the general practitioner would be eliminated. Also, the farmers would prefer to be supervised by the general practitioners, and for any scheme to be successful it would be necessary to work in co-operation with the farmers. Mr. Holroyd thought that if the Tuberculosis Order was amended and much more compensation paid to the farmers, a far greater number of animals suspected of or actually suffering from tuberculosis would be reported than heretofore, and, in his opinion, that was the root of the trouble. If the farmers were given enough money and their sympathy gained, there would soon be plenty of reported animals to deal with and a corresponding reduction in the risk of infection, due to the earlier isolation or slaughter of infected animals. Mr. Holroyd heartily agreed with Section 3 of the "General" portion of the scheme under discussion and, in his opinion, the Ministry of Agriculture should ensure that no tuberculin, unless of a guaranteed potency, should be obtainable. At present the onus was on the practitioner who had no such guarantee. The Tuberculosis Order should undoubtedly be maintained and its scope should be considerably extended.

After further discussion, Mr. Holroyd moved that the following resolution be forwarded to the West of Scotland Division. Mr. Tweed seconded and it was unanimously approved:—

"That, whilst appreciating the endeavours of the West of Scotland Division, this Division is of opinion that the scheme as detailed is unworkable in England. But this Division considers that the matter is of such national importance that it recommends the formation of a composite Committee of Veterinary Scientists and Veterinary Practitioners to consider the whole question."

Cattle Cases of Obscure Causation.—Mr. Tweed referred to an interesting condition in cattle which he had recently seen at two farms in the same village. The symptoms were high temperature, diarrhœa and loss of appetite, the animals finally going down. Death occurred in all cases with temperatures over 105°. *Post-mortem* examination showed inflammation of the fourth stomach and intestines, but nothing more definite. Bacteriological examination of the blood, heart, spleen, kidneys, bowel, and urine, revealed no bacterial infection. Examination of the foodstuffs also proved fruitless, as also did examination of the water supply. In his opinion, the condition was a toxæmia, but he was very much in the dark as to the causation.

Mr. Curbishley said he was acquainted with a similar outbreak in two nearby farms, having been called in as a consultant, and he confirmed the symptoms cited by Mr. Tweed. Similar examinations of blood, etc., gave no definite result, but ricine poisoning was suspected. No trace of the poison was found, and the condition was a mystery. In these cases, also, the water supply was beyond suspicion, whilst the food differed at each farm—linseed cakettes at one farm and soya meal and hay at the other. He advised a change of hay, as the stack in use was an old one.

Mr. Holroyd observed he had come across cases similar to those reported and he had always referred to the condition as food poisoning. In his experience, if the foods were changed the condition ceased, but it was not always easy to find which food was causing the trouble, and he had never known bacteriological examination to help in any way in these cases.

The meeting concluded with a vote of thanks to the President for his conduct in the Chair, which was carried in a hearty manner.

John Spruell, *Hon. Secretary.*

XUM

Lincolnshire and District Division, N.V.M.A.

ANNUAL MEETING AT GRANTHAM.

In strong and happy contrast to that of the previous year—which had to be postponed on account of the smallness of the company—marked success attended the Annual General Meeting of this Division at Grantham on February 17th, 1930. The meeting was not only the occasion for the election of officers, but was noteworthy for the presentation of a paper by Mr. E. Brayley Reynolds, of Newmarket, on the interesting and important subject of certain conditions met with in the mare following parturition and in the newly-born foal.

Those who supported the President by their attendance were Messrs. W. A. Dickinson, G. Eaton, T. Hicks, T. Knowles, W. W. Lang, G. Lockwood, F. M. Sugden and H. C. Reeks (Hon. Secretary), while Mr. E. B. Reynolds, Miss Marion Stewart and Mr. Poles, Junior, were present as visitors.

Correspondence.—(1) From Messrs. F. L. Gooch, H. P. Standley, C. W. Townsend and H. H. Truman, apologising for their inability to attend the meeting.

(2) From Mr. W. J. Ironside, of Loughborough, requesting the Society to accept his resignation as he was unable to attend its meetings. Mr. Ironside's resignation was accepted, with regret.

ELECTION OF OFFICERS.

The next business was the election of office-bearers for the ensuing year.

President.—The retiring President (Mr. Poles), said that he desired to exercise his prerogative of nominating his successor to the chair by putting to them, with every confidence, the name of Mr. Porter-Smith. (Applause.) Mr. Porter-Smith had been an enthusiastic supporter of the Society and a regular attendant at their meetings, and such a step would be a means of showing the esteem which the members felt for him. He was sure that no one was better fitted to fill that position of honour, for Mr. Porter-Smith was a man well worthy to occupy it. (Applause.)

The proposition was seconded by Mr. HICKS, and carried with acclamation.

Vice-Presidents.—The retiring President and (re-elected) Messrs. Dickinson and Gooch.

Hon. Secretary and Treasurer.—The PRESIDENT said that he desired to have the pleasure of proposing the re-election of Mr. Reeks. During his (the President's) year of office Mr. Reeks had not only done all the work, but had carried out his duties with conspicuous ability and enthusiasm, and he, for one, would be only too pleased if Mr. Reeks would carry on.

Mr. LANG seconded, and the proposition was heartily and unanimously carried.

The President now called upon Mr. Reynolds to read his paper, which was entitled "Clinical Notes on some Conditions met with in the Mare following Parturition, and in the newly-born Foal." The members heard the paper with the keenest interest and appreciation, and at its conclusion discussed with zest some of the principal features. [Both paper and a report of the discussion are reproduced in the Clinical Section of this issue of the *Veterinary Record.*—ED.]

At the termination of the discussion, the PRESIDENT said that he would like to propose a very hearty vote of thanks to Mr. Reynolds for being so kind as to come there and give them a paper from which, he was sure, everyone had derived great pleasure and benefit. The vote of thanks was warmly accorded and acknowledged.

ANY OTHER BUSINESS.

Mr. LANG said that, under that heading, he wished to bring forward the question of honorary membership of the Division. Some of them might remember that, when he gave a paper at Leeds some time ago, he expressed the opinion that the societies were far too tardy in according recognition to good work done by their fellow members of the profession. On their list, they had only two Honorary members, and he proposed that they should confer that honour upon several more members of the profession, this being the only honour which it was within their power to bestow.

Mr. HICKS thought that Mr. Lang's proposition was an admirable one, and he had the greatest possible pleasure in seconding it. It was some years since the Lincolnshire and District Division had conferred that honour upon anyone, and he hoped that the members would agree to carry the suggestion into effect. He had great pleasure in nominating Sir John M'Fadyean and Mr. Caulton Reeks, as Honorary Members. Mr. LANG seconded the nominations.

The PRESIDENT nominated Professor James Macqueen, the HON. SECRETARY seconding.

The final nomination was that of Mr. Richard Hudson, of Retford, this being made by Dr. LANG, with Mr. LOCKWOOD as seconder.

This concluded the business of a meeting the success of which encourages the hope that the occasion marked an important step forward in the process of revitalising this old-established Division of the N.V.M.A.

H. C. REEKS, *Hon. Secretary.*

General Seeley Champions Cavalry.

The *Observer*, reviewing Major-General the Rt. Hon. J. E. B. Seeley's recently-issued book "Adventure" (Heinemann, 21s.) says:—"More than a third of the book is filled with the experiences of General Seeley in the Great War. His story of the operations round Antwerp in 1914 is of absorbing interest; but it was later, when in command of the Canadian Cavalry Brigade, that Seeley's great work was done. He is as vigorous a champion for cavalry as was Nolan himself: 'All the developments of modern warfare have rendered cavalry not less effective, but more valuable than before'; and 'Without them I am quite sure the retreat of March, 1918, would have been a débâcle, and Germany would have won the war.'"

It is a sobering reflection that the farmers, who have been particularly apt of late to complain of their sorry plight, have so far done very little to help themselves or the country in the matter of pig breeding. It is very foolish to neglect practical and obvious methods of self-help and to appeal desperately for the moon.—*Country Life.*

The unexpected discharge of a mechanical killer in a Brighton slaughter house resulted in two men being injured. The accident occurred while one was handling the killer, which had not been used for some time, when it suddenly went off. The bullet passed through the palm of his left hand and entered the left side of the second man. Both were taken to the Royal Sussex County Hospital.

Sale of Tested Dairy Cow.

Question of Warranty.

A case of interest to the profession was heard before Judge R. H. Roope Reeve, K.C., at the Hereford County Court recently, when Mr. William Ridley Thomas, dairy farmer, of Nunnington, near Hereford, was successful in his claim against Mr. Montague Perkins, Holme Lacy, Hereford, Shorthorn breeder, for alleged breach of warranty regarding a cow the plaintiff bought from the defendant at the annual sale held at Hereford last autumn, promoted by the Herefordshire, Gloucestershire, and Worcestershire Milk Recording Societies.

Mr. Thomas purchased for 18 guineas Mr. Perkins's heifer Holme Lacy Primula V., which was described as "having passed both intradermal and ophthalmic tests, September 19th, 1929," and relied on the animal being free from tuberculosis, because the defendant dealt very largely in dairy cattle, and it was part of his business to supply cattle of the particular character required at the sale. Subsequently the animal was found to be in a very advanced stage of tuberculosis and had eventually to be destroyed.

Evidence called for the plaintiff included that of Mr. R. Wooff, M.R.C.V.S., county veterinary officer, who said that when he examined the animal on December 8th there were clinical symptoms of tuberculosis, a chronic cough, distinct lesions in the lungs, and enlargement of glands at the back of the throat. He afterwards made a *post-mortem* examination, and found tuberculosis which had existed for at least six months.

The defence was that there was no warranty, and no knowledge on the part of the defendant that the animal was tuberculous, and that the defendant had had a certificate from a veterinary surgeon that the cow had passed the tuberculin test.

The Judgment.

Judge Roope Reeve, K.C., in giving judgment, said: This is a case in which the buyer of a heifer at an auction sale seeks to recover the price paid, under an alleged breach of warranty, which, according to the purchaser's contention, was contained or implied in the conditions of sale. The heifer was purchased at a sale by auction of milk recorded cattle on October 11th, 1929, at Hereford Cattle Market, held under the auspices of the Herefordshire, Gloucestershire and Worcestershire Milk Recording Societies. There was at this sale not only a sale, but prizes were given in certain classes. The cow in question was entered in Class 4 for heifers in milk or calf, and in the catalogue the milk was recorded officially. In the catalogue the heifer, Lot 39, was described at length. I do not propose to go fully into the description, and it is only necessary to mention that the full pedigree was given with the name of the owner of the heifer; and the heifer was described as bred by the owner. The pedigree was given to the fifth or sixth generations, and there were notes as to the milk records of the ancestors of this heifer. So I have not the least hesitation in saying that this was a sale held for the purpose of attracting people interested in what is given in prominent type in the catalogue, namely, milk recorded cattle. It was the whole tenor of the catalogue that the class of persons catered for were persons interested in buying cattle, either directly or indirectly, for producing milk or breeding progeny, and which would be suitable for dairy purposes. The cow was sold under a description that would invite a purchaser desirous of buying a cow that would be suitable for milk producing purposes.

Now among other descriptions of the heifer, is that it had passed the intradermal and ophthalmic tests by F. L. Clunes. There could be only one purpose in publishing that statement. Its purpose could only have been to lead the purchaser to believe that this cow was free from tuberculosis. True, it was not stated in terms that the cow was free from tuberculosis, or that it was warranted free from tuberculosis. If that had been so, this action would not have been brought. But there was the statement that had the intention to lead a purchaser to believe that the cow was believed to be, and had been certified to be, by a competent expert, free from tuberculosis. So, it is not improbable, and the evidence has satisfied me, that the heifer was suffering from incipient or actual tuberculosis on September 19th, the date of the certificate. I have had the advantage of hearing the evidence of the veterinary surgeon who gave the certificate, and it would appear in justice to his competence that he gave the certicate without really making a sufficient examination to enable him to express an opinion; that, as a matter of fact, has since turned out to be erroneous, in accordance with my finding that the heifer was tuberculous. He has said that his certificate was no more than a sort of swearing by the card, in the form in which it appears in the catalogue, that the cow had passed the test. But I do not doubt that if he had made a careful clinical examination —and the hiefer was sold as simply complying with the tests stated in the catalogue— his knowledge would have led him at least to the suspicion that the heifer was not one that could safely be certified, in general terms, as being free from tuberculosis. I am constrained to believe that this was one of those exceptional heifers that, notwithstanding the presence of tuberculous disease, did pass the test. That it was tuberculous at the date of the sale I have no doubt, and at the time of the test also. I think, too, that the vendor himself was to some extent misled by the certificate that he had obtained. He might have had his suspicions but, as he has said, he relied, he was content, and indeed he was bound, to be guided by the test, not knowing that the test may on occasion fail.

I hold that the heifer was in fact tuberculous at the time of the sale. I have held that this statement in the catalogue is one that, to say the least, would induce a purchaser to believe that the heifer was free from tubercle. I have also held that the general description of the heifer was that it was suitable for milk-producing purposes. Now is there in general law, or under the description in the catalogue, any warranty that the heifer was free from tuberculosis? There was no express warranty, but there was the statement in the catalogue as to its having passed the tests that would induce the belief that the heifer was free from tubercle. But does that amount to a condition of warranty? Mr. Matthews relies on the first exception of Clause 14 of the Act where the buyer by implication makes known to the seller the purpose for which the goods are required. Personally, I am more impressed by the second exception, concerning where the goods are bought by description from a dealer who deals in goods of that description, and the language of that exception is sufficient to dispose of this case. "Where the goods are bought by description from a seller who deals in goods of that description, there is an implied condition that the goods shall be of merchantable quality." Were the goods—the heifer—bought by description? I have already stated that the general description of this heifer in the catalogue is undoubtedly a description of a milk-producing heifer. Then there is "from a seller who deals in goods of that description." The defendant admits that he is a person with a reputation for these milk-recorded cattle that stands high, and I am bound to hold that he is a seller dealing in goods of that description. Therefore it is a case in which the heifer was bought by description from the seller, and with that description there is an implied condition that the goods shall be of merchantable quality. But it is laid down: "If the buyer has examined the goods there shall be no implied warranty." I am not clear if this case is covered by that. The heifer was exposed for several hours before the sale. I do not think I can hold that plaintiff examined the heifer. He may have had a casual look, but that he made any examination for the purpose of ascertaining whether the heifer had a particular disease, I cannot say, and still less could I say that he made an examination for the purpose of finding whether it had tuberculous disease. The man was to some extent lulled to rest. He had the statement that it had been tested and examined.

If the disease had escaped the observation of the veterinary surgeon, I cannot say that the purchaser would have detected it. The plaintiff claims the sum of 18 guineas, the price he gave for the heifer, and other charges making £27 11s. 6d. less £2 5s., making £25 6s. 6d., and there will be judgment for the plaintiff for that amount, with costs.

From The Veterinarian,

January, 1830.

On Breeding.

By Mr. Karkeek.

(*Continued from page* 272.)

The *Circassians* breed some beautiful and useful animals. They are very fleet, and capable of great exertion.

The *Persians* are principally indebted to the Arabians for their horses, which are larger and handsomer than their pregenitors, owing, probably, to the superior richness of the Persian soil.

The horses bred in the East Indies and China are very small, and some of them so diminutive as scarcely to exceed the size of a large dog. Those which are used by persons of distinction are chiefly brought from Persia, Tartary, and Arabia.

Arabia has been considered, by some authors, as the primæval seat of the horse, from whence Africa and other places were supplied; whilst others believe the reverse, and give Africa the credit of having furnished Arabia with its beautiful breed, through the medium of the Egyptians.

Nothing is more probable, than that the horse was first subjugated to the purposes of man in Egypt. She was the first civilised country in the world; her wisdom was the admiration of every country; her institutions and laws were the model of the classic Greeks; philosophers resorted to her,

"As the mother of science, and the house of gods;" legislators, as to the abode of knowledge and the laws; and poets, as the land of literature and pœsy.

Everything we read respecting this singular nation gives us a very high idea of their sagacity, and leaves us not a doubt respecting their claim to having first tamed the desser-born-horse, and taught to "bear the reins;" but, from the nature of the country, Egypt never could have been a place capable of breeding horses in very high perfection, though she possessed them in great numbers. Diodorus Siculus informs us that, "1,656 years before the Christian era, Sesostris, king of Egypt, possessed 24,000 cavalry and 27,000 armed chariots;" yet, to what country they were indebted for them history does not inform us; all their records are lost; and, of the vast library of Thebes, not a volume remains to instruct us on the subject.

Arabia certainly possessed horses in the highest perfection in the days of the author of the book of Job, who was an inhabitant of the very spot, and who, at that early time, when the animal creation possessed much of its primitive excellence, composed that sublime description of the horse.* Job was reckoned by Dr. Owen as contemporary with Abraham; whilst Philo, Aristeas, and Polyhiston, and a great many of the Fathers, agree in supposing him to have been one of the ancient kings of Edom, and third in descent from Esau; therefore Arabia must have had horses at a very early period of the world.

The original language of the book of Job is Hebrew blended with Arabic, which is acknowledged to be the pure old grammatical Arabic: "this was the dialect of the Hebrews, and, by the people of the east, was accounted the richest, most energetic, and copious language in the world, being taught in their schools, as Greek and Latin are amongst Europeans."†

From these facts, it is apparent that Arabia possessed horses of a very superior kind, at a very early period; and that from them, and by the mediation of the Barbs, either directly or indirectly, have originated the finest and best horses in the four quarters of the globe.

* Job. chap. XXXIX, ver. 19th to 25th.
† Adams' Universal History.

Notes and News.

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events.

March 31st.—N.V.M.A. Committee Meetings at No. 2 Verulam Buildings, Gray's Inn, W.C.1:—Appointments, 2 p.m.; Veterinary Officers and Public Health, 3.30 p.m.

April 1st.—N.V.M.A. Committee Meetings at 10 Red Lion Square, W.C.1:—Mining Sub-Committee, 10 a.m.; Parliamentary, 11 a.m.; Organising, 11.30 a.m.; Quarterly Meeting of Council, N.V.M.A., at 10 Red Lion Square, W.C.1, 3 p.m.

April 1st.—Annual fees due to R.C.V.S.; Quarterly meetings of Committees, R.C.V.S.

April 2nd.—Registration and other Committees, R.C.V.S.

April 3rd.—Examination, Registration, and Parliamentary Committees, R.C.V.S.

April 4th.—Library and Finance Committees, R.C.V.S.; Quarterly Meeting of Council, R.C.V.S.

April 7th.—Meeting of the Editorial Committee, N.V.M.A., 4.30 p.m., at 2 Verulam Buildings, Gray's Inn, W.C.1.

April 10th.—Meeting of the Central Division, N.V.M.A., at The Royal Veterinary College, Camden Town.

April 11th.—Meeting of the Mid-West and South Wales Division, N.V.M.A., at Bath.

April 12th.—Meeting of the Yorkshire Division, N.V.M.A., at Leeds.

June 5th.—R.C.V.S. Annual General Meeting, Dublin.

June 13th.—D.V.S.M. Written Examinations.

June 16th.—D.V.S.M. Oral Examination commences.

July 2nd.—R.C.V.S. Quarterly Meetings.

July 3rd.—R.C.V.S. Quarterly Meetings.

July 4th.—R.C.V.S. Quarterly Meetings.

July 7th.—R.C.V.S. Membership Examination commences.

AUGUST 3rd to 9th.—11th INTERNATIONAL VETERINARY CONGRESS, CENTRAL HALL, WESTMINSTER.

A Good Move.

On Tuesday last the occupancy by the Association of premises at 10 Gray's Inn Square ceased, after six-and-a-half years of growth and progress, and the formidable business of moving into more commodious chambers at 2 Verulam Buildings, Gray's Inn, was successfully accomplished. Members of Committees will appreciate the change from cramped quarters to the handsome new meeting room, while the secretarial, editorial and "outer office" work will be carried on under greatly improved conditions of accommodation and equipment.

A hearty welcome is extended to all members of the profession to view the new offices, which are within 50 yards of the old, and which are best approached by that entrance to Gray's Inn which is situated close to the junction of Gray's Inn and Theobalds Roads.

"A System of Description of Colours and Markings of Horses."

The attention of our readers is directed to the fact that copies of the above Report, as approved by the Royal College of Veterinary Surgeons, and which was reproduced in our issue of March 1st, are obtainable from the Offices of the N.V.M.A., 2 Verulam Buildings, Gray's Inn, London, W.C.1. Price 4d., post free.

Professor Wooldridge.

Following upon our report last week of the grave condition of Professor G. H. Wooldridge in consequence of an attack of pneumonia, readers will be relieved to learn from the latest information available, that some measure of improvement is manifested. Professor Wooldridge's strength is being maintained and he is progressing as well as can be expected in view of the very serious nature of his illness.

Army Veterinary Service.

R.A.V.C. Point-to-Point Challenge Cup.

Entries for the above race close at noon on April 11th and not on April 14th as previously notified. They should be forwarded, together with entry fee and hunt certificate, to Major R. M. Bamford, Station Veterinary Hospital, Aldershot.

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Resumption of Duty.

Major J. Harrison joined the Aldershot Command for duty on March 17th, 1930, after a long period of sick leave.

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London Gazette—War Office—Regular Army.

March 18th.—The following Lieutenants to be Captains (March 15th):—A. G. Heveningham and remains secd., C. U. K. Porter, I. D. Macrae, A. G. Ralston.

The following to be Lieutenants (on probation) (March 19th):—L. W. Coulden, A. A. Kidd, J. V. Tevlin, R. K. Kent.

Territorial Army.

March 18th.—Lt. A. V. Franklin to be Capt. (March 15th).

R.C.V.S. Obituary.

Binks, S. C., Aln House, Alnmouth. Graduated N. Edinburgh, May 21st, 1901. Died March 22nd, 1930.

Edgar, P. M., O.B.E., Ivy House, Battle, Sussex, Major late N.Z.V.C. Graduated Edinburgh, December 13th, 1895. Died in Nursing Home at Brighton, March 20th, 1930.

Howe, A. B., Fountain Square, Tideswell, Derbyshire. Graduated Edinburgh, May 24th, 1906. Died October 25th, 1929. Age 54 years.

Stephenson, Robert Henry, 57 King Street, Southsea, Portsmouth, Hants. Graduated Edinburgh, December 20th, 1894. Died March 19th, 1930, age 57 years.

Yates, George, Newton Abbot. Graduated London, December 20th, 1907. Fellowship May 13th, 1916. Died March 18th, 1930, age 54 years.

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Major P. M. Edgar, O.B.E.

It is with deep regret that we have to announce the death of Major P. M. Edgar, O.B.E., which took place at Brighton on March 20th, 1930, in his 62nd year, after a long illness.

The deceased officer graduated at Edinburgh on December 13th, 1895.

Major Edgar was resident in New Zealand for many years, in private practice or Government employ as a veterinary surgeon, and also served as an officer in the New Zealand Expeditionary Force, and was employed with the Forces in Egypt and France until 1919. He ably commanded the New Zealand Section of No. 4 Veterinary Hospital, Calais. He then took up private practice in Battle, Sussex, and joined the Territorial Army on June 28th, 1921, in which he served until March 16th, 1926, when he retired on reaching the age limit.

For his services in the Great War, Major Edgar was twice mentioned in Despatches, was awarded the O.B.E., British War Medal, and Victory Medal.

Through failing health, he was compelled to part with his practice at Battle last year.

Notwithstanding all his adversities, Major Edgar remained to the end what he always was—"one of Nature's gentlemen," whose character was beyond reproach, and whose charming personality endeared him to all who knew him.

Major Edgar was a widower with no family. The funeral took place at Bedford on March 24th, at which the following attended the funeral as family mourners:—Mr. William Edgar (brother) and wife, Mr. C. C. Thompson and wife, Mr. P. R. Thompson, M.R.C.V.S., Mrs. Hankin, Mr. A. Hankin, Mr. F. Hankin, Mr. Walker. Lieut.-Colonel W. H. Walker represented the Director-General and Officers of the Royal Army Veterinary Corps.

We tender out deepest sympathy to Major Edgar's relatives in their sad loss.

H.M. Stationery Office Publications.

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses:—London: Adastral House, Kingsway, W.C.2, and 28, Abingdon Street, S.W.1; Cardiff: 1, St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120, George Street.

Command Papers:—	Price Net.	Post Free.
	s. d.	s. d.
[3496.] Medical Research Council. Report for the year 1928-29	3 0	3 3
[3512.] Poisons and Pharmacy Acts; Report of the Departmental Committee on January 14th, 1930	1 0	1 1

Personal.

Wills.—Callow, Mr. Charles Jenner, M.R.C.V.S. (62), of Millgrove, Mill Road, Burgess Hill, Sussex (net personality, £975); gross value, £1,047.

Stuart, Captain William Kennedy, R.N.V.R., retired, M.R.C.V.S., of Sackville Road, and Osborne Villas, Hove (net personality, £321); gross value, £1,069.

Harper Adams Agricultural College.

With the appointment of Mr. W. R. Kerr, M.R.C.V.S., D.V.S.M., as College Lecturer and Adviser in Veterinary Science, a new department has been established at the above College for the assistance of farmers in Shropshire, Staffordshire and Warwickshire, and of poultry-keepers over a wider area. So far as farm animals are concerned Mr. Kerr will only be able to deal with special problems arising in the College advisory area. He will not undertake routine work which falls within the province of practising veterinary surgeons, and will only visit farms at the invitation of the local veterinary practitioner in charge of any case on which a second opinion is required.

"Neglect of Animal Husbandry."

Dr. Share-Jones, Director of Veterinary Studies, University of Liverpool, in the course of a communication published under the above heading, in a recent issue of *The Times*, stated:—

"When reviewing for a well-known international publication the progress of veterinary science during the last decade the fact which struck me most forcibly was the rise in animal husbandry in many countries as compared with our own. So great has been the progress made that departments have been founded in universities abroad dealing with component parts such as cattle husbandry and swine husbandry. There is no university in Britain with a Chair dealing with animal husbandry, even as a whole. This is the position in the greatest livestock country in the world. It occasions no surprise to me that our neglect to appreciate the magnitude and importance of this division of agriculture has allowed us to drift into the position of having to import more than 50 per cent. of the essential food products derived from animals that we need for our own consumption.

"For many years it has been my practice on every appropriate occasion to draw attention to this, and also to our neglect to utilise effectively the by-products of the animal body. My point has been, and is, that the re-establishment of the little country factories deriving their raw materials from the domestic animals and the establishment of new ones would make an invaluable contribution towards arresting the migration of our population from the countryside to the towns. Small factories, dealing with leather and woollen goods; articles derived from such raw materials as bone and hair; oil refineries, etc., represent rural industries which when carried on within reasonable limits do nothing to mar the amenities of our rural life. Yet they would provide labour on the countryside and in the aggregate would make an enormous contribution to our national wealth. Furthermore, the utilisation of by-products now neglected would do much to reduce the cost of essential foods, such as milk, meat, butter, etc., to the consumer.

"Since I place this interpretation on the national method of developing the industry, it is not surprising that I regarded with some apprehension the proposal made on March 10th by Colonel Haddick to establish one great centre in Gloucestershire dealing with animals, their products and by-products, and which would be designed to serve the whole country.

"Surely it would be wiser to attempt to accomplish this in a manner that would preserve rural industries in rural surroudings. It can be done by appreciating the immense possibilities of existing centres scattered throughout our most productive areas."

The Village Blacksmith.

Depression throughout the countryside is deepening and spreading. Starting with farming pursuits it is, as was inevitable, affecting in progressive fashion activity of every kind based on the land. Perhaps no trader or artisan has been more severely injured by the changes in the farming position than the blacksmith. The reduction in the number of horses to shoe, of implements to repair and keep in suitable working condition, and generally in work of the type that used to fall to the lot of the village blacksmith has imperilled the very existence of this worthy class of artisan. One after another village smithies are being abandoned or reduced to insignificant proportions, at best giving part-time employment, and the result is prejudicial both to the blacksmith and the farmers in the neighbourhood. The absence of a skilled blacksmith from a district is a serious defect, and yet circumstances have decreed that a large proportion of the forges in the countryside shall be closed or only partially active.—*The Times.*

Use of Horses on the Highway.

At a recent conference convened by the National Horse Association, at which Lieut.-Colonel Sir Archibald Weigall, K.C.M.G., presided, and which was representative of most of the Horse Societies, a discussion of the Roads Traffic Bill, as affecting the owners and users of horses, took place.

All the existing privileges now enjoyed by horse users on the road were discussed, especially in regard to their inclusion, duly amended, in the proposed Highway Code to be attached to the Bill.

The common warts in cattle, according to Creech of the Pathologic Division of the Bureau of Animal Industry, are probably caused by a filtrable virus. Experimental inoculation of a filtrate from bovine warts proved positive in about 50 per cent. of the tests.

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Over forty persons are reported to be lying ill with trichinosis in the hospitals of Stuttgart. Six cases have already proved fatal, and a number of people are still in grave danger. The persons in question a few weeks age had eaten of bear ham, which had been served in a restaurant as a delicacy.

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

Royal Sanitary Institute's Congress, Margate, June 21st-28th, 1930.

To the Editor of The Veterinary Record.

Sir,—For the information of your readers who are desirous of making arrangements to attend the Veterinary Hygiene Section of the above Congress, I send you particulars of the programme, etc., as follows:—

Section "F"—Veterinary Hygiene.

To be held in the Congregational Hall, Margate.

President.

Major-General Sir John Moore, K.C.M.G., C.B., F.R.C.V.S.

VICE-PRESIDENTS.

W. Horner Andrews, D.SC. (Lond.), M.R.C.V.S., Director of Veterinary Laboratory, Ministry of Agriculture, New Haw, Weybridge.
A. W. Bray, C.C., late Chairman, Cattle Markets Committee, Corporation of London.
J. G. Cattell, M.R.C.V.S., D.V.S.M., Veterinary Inspector, Kent County Council.
A. Cornish-Bowden, M.R.C.V.S., Beckenham.
T. Dalling, M.R.C.V.S., Wellcome Research Laboratories, Beckenham.
F. B. Ditmas, M.R.C.V.S., Folkestone.
F. W. Medlock, M.R.C.V.S., County Veterinary Inspector, Surrey County Council.
E. Middleton Perry, C.B.E., T.D., F.R.C.V.S., Veterinary Surgeon, Borough of Wimbledon.
L. P. Pugh, B.SC., F.R.C.V.S., Sevenoaks.
Sir H. Percy Shepherd, C.C., Chairman, Cattle Markets Committee, Corporation of London.
H. Taylor, F.R.C.V.S., Haywards Heath, Sussex.
R. M. Wilson, B.SC. (Agric.) Principal, University of London, South Eastern Agricultural College, Wye.

LOCAL SECRETARIES.

E. P. Barrett, M.R.C.V.S., 12 Clarendon Road, Margate.
H. E. Bywater, M.R.C.V.S., Veterinary Inspector, West Ham.

Thursday, June 26th, 10 a.m.—1 p.m.

1. Presidential Address.
2. A paper on "Veterinary Science in Relation to State and Municipal Control," by D. S. Rabagliati, O.B.E., B.SC. (Agric.) (Edin.), F.R.C.V.S., D.V.S.M., Chief Veterinary Officer, West Riding, Yorks.

Friday, June 27th, 10 a.m.—1 p.m.

1. A paper on "Inspection of Foodstuffs other than Meat, Milk and Fish," by A. Gofton, F.R.C.V.S., Edinburgh.

Members of the veterinary profession will also be interested to know that Professor O. Charnock Bradley, M.D., D.SC., CH.B., M.R.C.V.S., Principal, Royal (Dick) Veterinary College, Edinburgh, has accepted the invitation of the Council of the Institute to deliver the Lecture to the Congress which takes place on Tuesday evening of the Congress week. The title of his lecture will be "Diseases of Domestic Animals from the Human Angle." This is the first time a veterinary surgeon has been invited to give this lecture to the delegates attending the Congress.

I am, Sir,
Yours faithfully,
JAMES R. HAYHURST.
Recording Secretary.

Metropolitan Cattle Market,
Islington, London, N.7.
March 25th, 1930.

Eradication of Tuberculosis.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—There is only one way to deal with tuberculosis and that is to eradicate it in a radical manner and not by spending £20,000,000 a year in tinkering with it and not reducing its incidence to any extent either in man or animals.

There are ten times or more cattle,* to say nothing of pigs and poultry, in the U.S.A. than there are in Great Britain, and I doubt if there is a less proportion of tuberculous dairy cattle in their large towns than there is in Great Britain. What would be interesting to learn is what is the proportion of store cattle living in the open in the U.S.A. that have tuberculosis compared with cattle living under similar conditions in Great Britain?

The task of eradicating the disease in Great Britain seems to be minute compared with what it is in the U.S.A. or even in Canada. The tinkering methods we have adopted and are adopting cost us some £20,000,000, without obtaining much, if any, reduction in the incidence of tuberculosis either in man or in cattle, pigs, poultry and other animals. In a small country like Great Britain the difficulty of overcoming it seems small, but the courage to grapple with it is evidently lacking. What is spent on cleansing and sterilizing dirty or infected milk so as to render it innocuous to man would pay for the total eradication of the disease. Some medical authorities consider "milk" is a fine food for increasing the development of young people. But agriculturists know well what the forcing of animals other than for the show-ring or the butcher means; also the forcing of plant life unless for forage or the table. Increasing rapid growth by forcing implies decreasing the stamina and fertility and rendering people and animals unfit for hard, strenuous work or less resistant to disease; or the shortening of their lives.

Nevertheless, milk as a food for infant life should come from healthy or disease-free animals kept under the best hygienic conditions and collected and distributed as cleanly as possible. Where monkeys, parrots, rabbits, guineapigs, pigs and other animals are denied milk, tuberculosis, unless contracted from poultry or mankind, is not known.

A few people dying from psittacosis perturb the public mind very much more than do many thousands being rendered more or less chronic invalids or maimed or dying, after a larger or smaller measure of prolonged suffering, from tuberculosis.

What seems to be generally overlooked is that those people who go to the trouble and expense of eradicating the disease from their herds are not protected against those who adopt the *laissez faire* attitude and disseminate the malady to all and sundry.

The former at least should be subsidized at so much per head of their cattle at the expense of those who make no attempt to lessen its incidence. Such penalty would encourage the defaulters to imitate those receiving the reward.

Tuberculosis is in reality a very easily prevented disease, but clean sheds and rotten cows in them are not going to eradicate the disease any more than is the much-vaunted vaccination. Chronic infectious diseases, as contagious pleuro-pneumonia and glanders, were only eradicated by the pole-axe and it is very doubtful if there is any better means than this crude or brutal method for the elimination of tuberculosis.

Public Health Authorities have to a certain extent cut the ground under the feet of the veterinary profession (which has done very little, if anything, to reduce the incidence of the disease in cattle) by overcoming some of the danger by the pasteurization of milk. But this apology for lessening the danger is not perfect when some of the treated milk has, it is said, a bacterial content worse than that of sewage, or is carrying tubercle bacilli. Such a process means, at its best, destruction of living germs, saprophytic or otherwise, without elimination of the products of the killed bacteria or of filth. This is extolled as a food fit for infants, adolescents or invalids.

That is not the responsibility of the veterinarian, however, if it is that of the medical man. Our responsibility begins and ends at the cow and its surroundings.

Some of us no doubt still remember the final sentence of the speech of the late Professor Nocard at the Congress on Tuberculosis held in London in 1901. He said "Mothers of families, boil your milk."

How much further have we got? Have we got to boiling point? But our responsibility is confined to the cow and the question remains an agricultural one unless the public demands, with no uncertain voice, pure, clean milk from disease-free cows. I do not see what cattle and cowsheds have to do with the medical officer. It is a matter for the

[* The returns for the latest year for which sufficient figures were available (published by the *Farmer and Stockbreeder*) were as follows:—Cattle, United States, 55,681,000; Great Britain and Ireland, 12,230,000.—Ed.]

veterinarian. All the medical man should do is to see that mankind does not consume diseased or injurious food or contract disease from his surroundings.

Yours faithfully,

HENRY GRAY.

March 15th, 1930.

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TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—We have had a great amount of discussion amongst ourselves on the subject of "The Eradication of Tuberculosis in Cattle"; a great scheme has been put forward and discussed.

There appears to be no doubt that the disease has attained a very serious hold upon the herds of the country and is causing tremendous financial loss. Nothing is being done to check it. The Tuberculosis Order has been in force for five years; it must have given the stockowners, the Ministry of Agriculture and the Veterinary Profession a greater insight into the effects of the disease and made all parties realise more than ever its gravity, the need for something to be done, and the difficulties that are to be faced and overcome before any serious action can be taken to eradicate it.

I think that the knowledge that has been gained by the three parties mentioned should be collected and discussed with a view of evolving some scheme which would be beneficial to the country.

I would suggest that the Royal College of Veterinary Surgeons or the National Veterinary Medical Association should approach the Government and ask that a Departmental Committee be appointed to consider the whole question. If the Government could be persuaded to do so, this evidence could be gathered from various parts of the country from all the parties concerned. We should then be able to take a much better view of the whole question and probably the Government would be able to ask Parliament to take some action to enable the Ministry of Agriculture to commence an attack on this scourge, which is causing such a serious loss to the stock-owners of the country.

I throw out this suggestion because I believe that it is the first step that will have to be taken and the time has come when something should be done.

Yours faithfully,

E. H. PRATT, M.R.C.V.S.

Northallerton.

March 20th, 1930.

The Editor acknowledges the receipt of the following:—

Communications from Mr. N. H. Hole (Weybridge), Major H. Kirk (London), Mr. K. F. Quin (London), and Mr. H. S. Purchase (Weybridge).

Report of a meeting of the Scottish Branch, N.V.M.A., from Mr. W. C. Miller, Hon. Secretary.

Report of a meeting of the North of England Division, N.V.M.A., from Captain J. R. Rider, Hon. Secretary.

Diseases of Animals Acts, 1894 to 1927.

SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy).§†		Parasitic Mange.§		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks confirmed.	Animals attacked.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1 to 15 March, 1930	23	24	—	—	—	—	12	14	23	104	54
Corresponding period in—											
1929 ...	19	19	2	449	—	—	12	20	28	55	22
1928 ...	31	32	1	92	—	—	21	41	10	69	35
1927 ...	28	32	1	124	—	—	29	40	27	57	30
Total 1 Jan. to 15 Mar., 1930	104	109	—	—	—	—	85	131	221•	529	201
Corresponding period in—											
1929 ...	105	118	19	1,701	—	—	92	171	256	257	104
1928 ...	130	141	79	7,109	—	—	118	266	225	346	158
1927 ...	113	149	21	1,917	—	—	134	225	260	244	100

NOTE.—The figures for the current year are approximate only.

• Excluding 8 outbreaks notified to the Ministry in 1930 but actually confirmed in 1929

† Including outbreaks in recently imported animals. § Excluding outbreaks in Army Horses.